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AN INTRODUCTION TO PSYCHOLOGY

MORE ESPECIALLY FOR TEACHERS

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PREFACE

THE purpose of this little book is exactly expressed by its title. We have not aimed at adding another to the long list of text-books of psychology, but only at providing a simple introduction to the subject for the use, more especially, of students of education in our training colleges. In the attempt to secure brevity and simplicity, we have often been dogmatic against our inclination; we have evaded philosophical problems that are rightly attendant upon a consideration of the fundamental notions of psychology; and we have omitted altogether several topics, such as the physiology of the central nervous system, the detailed doctrine of sensations, and the theory of spatial perception, to which considerable space is allotted in most text-books. The students for whom this book is designed have as a rule had no training in philosophy, and little, if any, in the biological sciences; and we have thought it better not to confuse them at the outset by abstruse or very technical discussions, but rather to leave the introduction of these topics to the discretion of those who lecture to them.

It may occasion more surprise that we have not included chapters on subjects of direct pedagogical interest such as fatigue or tests of intelligence, or

generally on the application of the methods of experimental psychology to pedagogical research. The reason is partly that we do not wish to add to the size of the book until its usefulness has been submitted to a wider practical trial than is within our power, and partly that an intelligent appreciation of experimental methods and results is impossible for students until they have a sufficient grounding in general psychological theory. Should the book be found to serve its purpose, we hope to add a chapter or two in the future on pedagogical applications.

The references at the end of each chapter indicate sufficiently to what writers we are most indebted. But we wish to emphasize more particularly our indebtedness to Dr. Stout, which will indeed be obvious to every expert reader of the following pages. We cannot calculate the amount of our obligation to him, because it has no end.

We have to thank Mr. R. Delaney, Principal of the Cheshire Training College, and Mr. A. J. Arnold, Principal of the Pupil Teachers' School, Sheffield, for reading the greater part of the manuscript, and for much valuable criticism and advice.

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CHAPTER I

INTRODUCTORY

§ 1. Psychology and Education. As this book is intended primarily for teachers, it may be well at the outset to indicate the relation of psychology to the schoolmaster's professional work. The practical teacher rightly considers his prime function to be that of instruction. We take it for granted that he knows the subject which he proposes to teach: his problem is to impart his knowledge to his class, and to do so in such a way that he encourages and disciplines his pupils' intelligence. Moreover, he should be aware of a larger responsibility. He is more or less *in loco parentis* to his pupils, and he is faced by the problem how best to train and form their character.

These, and not the study of mental behaviour, are his duties and his problems. But it may seem reasonable to suppose that, since his business is to train the mind intellectually and morally, the more he knows about the way that minds behave, the better. If he has grasped the fundamental principles of mental development and mental behaviour, surely he will be better able to understand and accommodate himself to and educate the pupils with whom he has to deal. In fact, it might seem that to be a successful teacher, he must be a sound psychologist.

Yet this conclusion would evidently be a great exaggeration. Every one knows many eminently successful teachers who have barely considered whether there are any general principles of a scientific character underlying their daily practice, and who would refuse to allow that the study of psychology could be of any use to them; whilst the majority, perhaps, though not going to this extreme, would deny it to be a necessity. What, then, is the truth of the matter? Why is psychology apparently not so necessary to the teacher as we might have expected, and of what real use can it be to him?

It is quite clear in the first place that a command of psychological theory could never be a substitute for the personal qualities of the teacher himself, even if psychology consisted of a body of doctrine thoroughly ascertained and universally agreed upon. Enthusiasm about his subject, a certain readiness of wit and authoritativeness of manner, a genuine sympathy with the young, above all that rather indescribable quality called tact—these are prime necessities lacking which no teacher can succeed, and having which he is likely to succeed though he ponders little on general principles. Nor is he necessarily unobservant of human nature because he does not reduce his observations to scientific laws; he has at his disposal a considerable amount of that popular psychological knowledge which is implicit in our ordinary thought and language; and he can consult the experience of his colleagues, not only by direct questioning, but also

by aid, for instance, of their text-books, which show the pictures, maps, and the like that have been found useful in some other class-room. Turning from all this to accepted treatises on psychology, he will very probably be disappointed with what they have to offer him. He will find a possible science, perhaps, but not an actual one, a study full of disputes and hesitations, and often so abstract and general as to seem to have little bearing on the difficulties that trouble him when dealing with concrete human beings.

Yet, in spite of all this, psychology, even in its present very imperfect condition, has its uses for the teacher, or at any rate for some teachers. Compare the somewhat similar case of the gardener. Up to a certain point a man may be a very successful gardener with scarcely any knowledge of scientific botany, and much of what he finds in botanical text-books will seem to him to have very little bearing on his work. Nevertheless a knowledge of botany may prove of service to him. It provides him with conceptions which connect his scattered observations, and so enable him to understand his observations better; it suggests to him means of meeting unusual difficulties; and sometimes it may give definite answers to problems that have perplexed him. Very much the same is true of the bearing of psychology upon the art of education, although, unfortunately, psychology is a much less developed science than botany. Many a young teacher is aware that he observes more than he can understand, and will be benefited by a knowledge of general principles to

which he can refer his observations, and by which he can relate them to one another. Moreover, even the most successful teacher's experience includes an appreciable number of failures for which he finds it hard to account—this boy who 'does not get on as he should', that one who seems to degenerate in character under treatment which improves his fellows. In cases of this kind, where empirical methods seem to fail, he is tempted to lay all the blame on the boy's natural dullness or badness, whereas he ought to consider whether his own methods are not to blame. But if he fairly ponders this alternative, he will have to undertake a sort of diagnosis of the boy's nature, and, if he undertakes this seriously, he will find himself driven back upon a consideration of general psychological principles, the study of which may suggest to him new modes of meeting the difficulty.

Lastly, there is a large group of special educational problems which are at bottom wholly or partly psychological problems, and which ought to be treated accordingly. Such are, for instance, the relative influence of precept and practice, the use of rewards and punishments, the question of right and wrong methods of teaching various subjects, the comparative degree of fatigue caused by study of different subjects, the proper length of hours, and the like.

Thus it does seem to be worth while for the teacher to study psychology. Capacity to deal promptly and successfully with the practical situation of the classroom involves much more than theoretical knowledge

of the principles of mental behaviour ; but, given the other necessary qualities, such knowledge may prevent our making mistakes and may help us to understand our own and other people's success : it makes intelligent criticism possible.

§ 2. What Psychology means : the methods of Psychology. In this brief discussion of the relation of psychology to the practice of the schoolmaster we have assumed that the reader is more or less familiar with the scope of the study. By derivation the word 'Psychology' means the doctrine of mind or soul. But the doctrine of mind or soul would include the consideration of many topics (e.g. that of immortality) which lie outside the range of psychology as we shall understand the term. The kind of psychology with which we shall be concerned is commonly called Empirical Psychology, and under this title we have to deal only with mental happenings or operations as we find them in ourselves and believe them to occur in others. That is to say, we have to do with desires, emotions, acts of perceiving, thinking, deciding, and other actual mental events and their conditions. Psychology is thus the study of the way in which minds behave, and the behaviour of mind at all levels and in all conditions is subject-matter for the psychologist. Even within this narrower range of facts, however, we find considerable specialization. One group of psychologists makes a special study of the animal mind, another group pays particular attention to the insane. In all cases, nevertheless, for reasons which we shall see later, a scientific knowledge

of the mental behaviour of normal human beings is fundamental. Again, the mind of the child behaves in many ways differently from that of the adult. There is progressive development from the helplessness of infancy to the relative independence of maturity, and the schoolmaster is particularly interested in this process of development, which is the special province of genetic psychology. But the study of the mental behaviour of children also requires a sufficient acquaintance with the behaviour of more mature minds.

From the point of view of procedure, the aims and the methods of the psychologist do not differ fundamentally from those of the chemist or the physicist. He observes mental behaviour, and compares the results of his observations with a view to reaching a system of general truths or laws of mental behaviour.[1] Just as in other sciences, this procedure may be invalidated by careless observation, by imperfect analysis, by rash generalizations, and so on. In his case both observation and analysis present special difficulties due to the nature of the material with which he has to deal, but those difficulties do not free him from the necessity of accurate first-hand acquaintance with the facts, nor allow him to claim generality for statements about the connexions between acts or states of mind, or about

[1] There is a difference between what is called observation in psychology and observation in the physical sciences, because we can never see a feeling or act of mind, nor perceive it by aid of any other of the senses. But a discussion of this difference is impossible in an elementary book: some account of psychological 'observation' will be found in the next section.

their conditions, unless he can show that they rest upon facts confirmable by other observers.

Furthermore, it is in things as they are, and not in things as they ought to be, that the psychologist is interested. The logician studies the meaning and principles of *valid* thinking, and the ethical philosopher those of *right* conduct or goodness. The psychologist, on the other hand, deals with any and all facts of mental behaviour. This does not mean that he can render no service to those interested in the training of character towards goodness. He knows, for example, that young children are often very untruthful. He examines the conditions which give rise to that characteristic—that is to say, he endeavours to understand its occurrence. In so doing, he may render the greatest possible service to those who are interested in helping the child to pass through this particular stage of his development with the least possible inconvenience and injury.

There are, however, certain special difficulties involved in the subject-matter of psychology, some of which come out very clearly when we consider the implications of the words we are bound to use in speaking of it. Thus we often say that something or other is 'in our minds', or even 'in our heads', or that our 'minds are so full of one thing that we let everything else slip away'. Now these words 'in', 'full', &c., cannot have their ordinary spatial sense. Mental processes are occurrences in time, they have *a now* and a *then*, but they have neither length nor

breadth nor position in space. To ask *where* they occur is therefore meaningless. The danger of confusing mental process with brain-process will be avoided if this be kept in mind. At the same time it is true that mental processes are, in some way which is not at all understood, connected very closely with the physical processes which take place in the central nervous system, and it is commonly held that no mental processes occur unaccompanied by brain processes. Thus, although the two sciences of psychology and physiology deal with subject-matter of fundamentally different kinds, yet, as we have minds and bodies at once, the two sciences may often aid each other, and the psychologist may take into account facts which, though not facts of mind, yet help him to understand mental process.

§ 3. Sources of Psychological data: (1) 'Introspection'. The fact that our thoughts and feelings cannot be measured by a footrule, does not, of course, make them any the less real. A fit of melancholy through which I am passing is as much a fact as a tunnel three miles long through which a train is moving. But, whereas I am the only person who can be directly acquainted with my melancholy, all the people in the train have equally direct acquaintance with the tunnel: they perceive its darkness, its stuffy smell, &c. This difference brings out another peculiarity in the subject-matter of psychology. Obviously the only mental behaviour which we can ourselves live through is our own. We may conclude that our

friend is angry because his brow is lowering and he clenches his fists or storms and rages, but we cannot live through *his* anger ; he only can do that. Similarly, you cannot show another person the sorrow which you feel as you might show him your hat. Mental processes are in this sense private to the self that lives them through. You and I may see the same object or want the same thing, but your seeing is not my seeing, nor your desiring my desiring.

The process of reflecting on the operations of our own minds is called *Introspection*. It is necessarily the foundation of the whole matter, but yet to introspect carefully and accurately is not easy. To do so requires practice, but without it no one can become a psychologist. An attempt to learn the subject wholly from text-books is even more certainly doomed to failure than an attempt to learn botany without ever looking at a plant.

The special difficulty of introspection comes partly from the natural tendency of most healthy persons to look outwards rather than inwards, and partly from the fleeting character of mental processes themselves. Practice will remove the former difficulty, and the latter may be largely overcome either by looking back in memory upon the process which is now over, or by renewing its conditions and so reviving it. The effectiveness of *Retrospection* is indeed largely diminished by lapse of time : memory fades very rapidly, and in regard to details it is not to be trusted after any considerable lapse of time. Never-

theless, we must in many cases rely upon memory for an account of states of mind which would be destroyed by an effort of contemporaneous introspection. If you are absorbed in a cricket match, or in the enjoyment of music, you will change the character of your states and activities by trying to reflect on them at the moment of their existence: you can examine them only when they are past.

Important as our own introspection is, it is necessary to supplement our results by comparing them with the results which other people have arrived at. In practice, probably, your first attempts at systematic introspection (for after all everybody introspects more or less) will begin under the guidance of an expert psychologist, but the comparison between his results and those of your own reflection cannot be omitted if you are to succeed in mastering even the elements of the subject. Biography and autobiography, novel and drama, may also render some assistance, in so far as they reveal the workings of other minds, real or imaginary. But books of this kind are not written with a purely scientific interest; at best, they can only furnish data for the psychologist to deal with in a systematic way.

§ 4. Sources of Psychological data: (2) 'Observation of others'. Again, it is the commonest thing in the world to argue the condition of another person's mind from his external appearance and actions. Thus, we infer from a man's facial expression that he is angry, and from his conduct we draw conclusions about his intentions. Common as this procedure is, its liability

to error is equally commonly admitted. After all, inferences of this kind rest primarily upon knowledge of ourselves: the connexion between mental behaviour and external conduct which we find in ourselves is assumed to exist also in others.[1] Such an assumption is not always justified. We must realize and allow for the differences between ourselves and others, or we shall often make very serious mistakes. The less the difference is, the less likelihood is there of error. We can judge of our own countrymen more easily than of foreigners, and of adults more easily than of children. The difficulty is greatest when we are dealing with relations between the bodily behaviour and the mental behaviour of the lower animals, but it is never wholly absent when we argue back from the conduct of others to the mental processes which gave rise to it. The bearing of this upon the special problems of the schoolmaster will be at once apparent, for to understand the working of the immature minds of his pupils is a very important and, at the same time, the most difficult part of his work.

§ 5. **Experiment in Psychology.** In recent years the psychologist has endeavoured to apply methods borrowed from the experimental sciences to the peculiar material with which he deals. Instead of waiting for events to occur, he arranges for their

[1] This does not mean that we first learn to know all about ourselves and only then begin to understand other people. The student should return to this question of observation of others after reading ch. xvi.

occurrence under conditions which are within his control. Such a procedure has the advantage that it can be repeated indefinitely, and the results can be tested; in other words, more accurate observation is possible. Furthermore, conditions may be varied, and the effect of the changes may be noted. Of course in a certain loose sense every lesson a teacher gives is an experiment. It is, at any rate, more or less a leap in the dark; he cannot tell beforehand exactly what the result will be. The 'word in season' spoken to an erring youth is similarly often a sort of experiment—a bow drawn at a venture—the consequences of which we cannot foresee. But in both these cases the complexity of the conditions makes accurate observation of results, and, above all, accurate interpretation of them, impossible. It is only when the issues are enormously simplified, and the conditions accurately arranged and noted, that experiment can be useful for science. The experimental psychologist has already done great service in investigating the connexions of bodily and mental processes, in determining the duration of the simpler mental processes, and in the study of other problems where accurate measurement is possible. Many of his experiments demand a degree of quiet, and of concentrated attention, which is not usual in ordinary life, but latterly attempts have been made towards the introduction of experimental methods on a large scale under less artificial conditions. The school class-room is sufficiently constant and controllable

to make a certain type of experiment possible and useful in it. Inquiries of many kinds have been, and are being, undertaken, with the object of learning more about the workings of children's minds. It cannot, however, be too frequently insisted on that success in experimental work depends ultimately upon first-hand study of our own minds.

References for Reading

The student must remember that this book does not profess to be more than introductory to the subject. At the end of the last chapter will be found a suggested course of further general reading. But in the meantime there are indicated at the end of each chapter special passages which should be consulted in works written in English.

§ 1. On Psychology and Education, cp. Harris, *Psychological Foundations of Education*, pp. 1–10; Münsterberg, *Psychology and the Teacher*, chs. xi, xii; Sully, *Teacher's Handbook of Psychology*, ch. i (B); Thorndike, *Elements of Psychology*, § 64; Welton, *The Psychology of Education*, ch. i.

§§ 2–5. A thoroughly satisfactory definition of psychology is difficult to formulate. But cp. on its definition and methods, James, *Principles of Psychology*, ch. vii; Royce, *Outlines of Psychology*, ch. i; Stout, *Manual of Psychology*, chaps. i and iii, and *Analytic Psychology*, ch. i; Sully, *Human Mind*, ch. i; and the articles on Psychology in Baldwin's *Dictionary of Philosophy and Psychology* and in the *Encyclopaedia Britannica*. On the relation of mind and body, cp. also Angell's *Psychology*, chaps. ii and iii; McDougall's *Primer of Physiological Psychology*; Mitchell's *Structure and Growth of the Mind*, lecture i. On experiment in psychology, cp. Myers, *Text-book of Experimental Psychology*.

CHAPTER II

THE FIRST RESULTS OF REFLECTION

§ 1. **Psychological Analysis.** We must now consider more precisely what is meant by analysis in psychology, and then ask the student to examine his own mental behaviour analytically with a view to observing some of its main characteristics.

We all recognize roughly many distinctions between our various mental states and activities. Words like 'angry', 'pleased', 'excited', 'observant', 'hopeful', 'despondent', indicate differences marked in everyday thought, and anybody would assure us that he knows the distinction between imagining what might have been and remembering what actually happened, or between emotional fervour and intellectual acuteness. Now the first task of any science or systematic study is to reduce the complex facts with which it deals to simpler elements, in order to facilitate comparisons; and comparison involves both noting distinctions and noting likenesses. Popular science, including popular psychology, is often guilty of serious error because its analyses are superficial: neither its aim nor its method is exact, and in more careful study many of its generalizations are found to need correction. The need of exactness is, of course, no less urgent in psychology than in other sciences, and although we must often make use of popular terms, we need to give them a precise meaning:

we must analyse and describe with greater accuracy. It follows that serious psychology will discover differences and likenesses that escape popular thought and language.

Psychological analysis has one characteristic peculiar to itself which it is important to notice. In chemical analysis we *may* actually break up the compound substance into simpler substances: we begin with water and end with oxygen and hydrogen. But a result of that sort is impossible in psychology. In the first place, the mental process whose constitution we are endeavouring to understand has usually ceased to exist before we begin to examine it analytically, and we have to recall it as best we can. Originally it was, so to speak, the whole of us; but now it becomes the object of our thought: its more or less mangled remains, as held in memory, are the object of our curiosity. In the next place, the analytic examination to which we subject it cannot give separate existence to the constituent elements, whether they be or be not capable under other circumstances of occurring separately. We may recognize the part they played in the original experience, but that experience was a unity which cannot be dissolved by our analysis.

This difficulty does not, however, destroy the value of analysis in psychology. For example, though I cannot notice colour without at the same time seeing a coloured area—though, that is, the percept is always a complex, the elements of which (colour and superficial extension) are never perceived independently—

yet in thought I can recognize and consider them separately, and can even arrive at a knowledge of the conditions of change in my perception of colour without discussing the perception of spatial relations at all. We may compare this case with the analysis of the feeling of reproach. In it I may distinguish both anger and affection, each of which *can* exist independently, and I may come to the conclusion that to be capable of feeling reproachful a person must be capable of affection and of anger; yet, in this case too, the original feeling of reproach is not broken up, but always is a unity.

§ 2. Some Fundamental Characteristics of Mental Behaviour. Comparisons are always easiest when the differences are striking. Let us compare for a moment the action of a stone dislodged from the mountain side and rolling towards the valley stream with that of a dog which has been left by its master outside a garden into which he has entered. The stone continues to roll until it is stopped by a projecting ledge, upon which it may lie for centuries without sign of discontent or any effort to continue its downward course by circumventing the obstacle. The dog, on the other hand, runs first in one direction, and then in another, trying various possible ways of getting through the fence. He will keep this up until he is successful, or until some new object diverts his interest. In pursuit of his aim he adapts himself to various conditions, trying to jump here, to squeeze a way through a hole there, or, seeing another man going towards the gate, he will make

use of him by bounding through as the gate is swung open. Moreover, if on other occasions his master treats him in the same way, he will show that he has learned by experience, for if he has found a gap, he goes straight to it, or if the fence has proved obdurate, he sits quietly waiting at the gate until his master reappears, or a chance arrival opens the way into the garden for him.

Behaviour of this kind is characteristic of mind. In the motion or rest of the stone we can find no aim, the failure to accomplish which produces signs of uneasiness. In mental behaviour we always find purposiveness, adaptability, adaptiveness in the matter of means, and capacity for learning by experience. Dogs, of course, are not all equally 'clever' in these respects, but most dogs are 'cleverer' than cats, and cats than rabbits. Indeed, if we tried to review the development of mental behaviour from the lower animals up to civilized man, these would be among the characteristics in which we should find growth most evident.

Nor is this less true of the mental differences between infants, children, adolescents, and adults. In the earlier periods of life the most striking characteristic of mental behaviour is its susceptibility to external influences, but as the child advances through adolescence to maturity, the part which purpose plays in his life becomes increasingly clear. He grows less and less dependent on his momentary surroundings. He can conjure up the past when he wishes, and can consider

the things that might have been, and things that still may be. He recognizes the importance of applying to present problems lessons learned from past experience, and he is well aware of the ends towards which he is directing his present conduct. He can work out beforehand the path he must pursue, and can foresee the steps necessary at each stage in the attainment of his object, even though his present surroundings give him no clue thereto. Moreover, he has at every moment, and he can appreciate, the help of the past records, the present actions, and the ideals of his fellows.

This difference between the mature mind and the mind of a child deserves attention. The younger a child is, the more closely is his mental behaviour tied to the needs of the moment. The child is incapable of working intentionally for a remote end; in this sense steadiness of purpose is not in him. It is the teacher's business to help him towards that; but, in the meantime, to make demands upon him which presume its existence, must lead to disappointment and possibly to injustice.

So, when we say that to pursue ends, to choose means, and to learn by experience, are general characteristics of mental behaviour as we know it, we must remember that these characteristics may be rudimentary; they develop and have not always the same form. This is most easily seen to be true of purposiveness. We call the behaviour of infants purposive, because it does make towards ends, the attainment of which brings

satisfaction; but these ends are not forethought or foreseen in the imagination, as are the ends at which adults aim. We, the onlookers, can observe that the child's conduct is a process towards the removal of some uneasiness or the attainment of some satisfaction, but the child himself does not regard it in that light. He acts impulsively, and we call his action purposive; but it is not, like our own action, purposeful.

§ 3. **Change and Continuity.** Let the student now examine his own mental behaviour more closely, and let him notice first its changefulness. This characteristic is evident enough when, for instance, we sit in a railway-carriage and watch the shifting scene that passes before our view. But it is always present even when on first thought it is not so evident. You may say that you can over a length of time pursue one set purpose, or think about one and the same object, or be in one and the same mood. True, but to fulfil your purpose you must take a number of successive steps; in thinking about the same object you do not remain stock-still in your thoughts, but you think of one aspect or relation of the object after another; and even your most lasting moods vary at any rate in intensity. Indeed, monotony induces sleep and unconsciousness: thus a crooning lullaby will often drive away insomnia. Sudden change, on the other hand, vivifies consciousness, as witness the effect of receiving a telegram in the midst of an afternoon siesta.

Change, then, there must always be as long as we

are conscious at all. But does change mean actual discontinuity of consciousness? Surely not: during your wakeful moments, however varied or even disturbed and confused your experiences may be, you cannot find any gap in consciousness as you pass from one experience to another. 'Consciousness does not appear to itself chopped up in bits.'[1] Take an extreme instance of sudden change: suppose that an explosion occurs in the street as you are passing. The transition from your previous thoughts is as sudden as can be, but the transition in all its suddenness is itself part of your experience.

Again, the transitions in our experience may be due, not to sudden disturbance from without, but to our own fickleness, caprice, and instability, qualities which are present in some degree in all of us; yet here also the history of our experience shows no real breach of continuity. Each moment of its course is a modification of the previous moment, and not something broken off from it or entirely new.

A special and very important kind of continuity may be noticed in mental behaviour in so far as it is determined by the pursuit of a purpose. Such process may stride across intervals of time and yet be in a sense continuous, for it may be interrupted, and then resume its course. Thus when you have recovered from the shock of the explosion you may return to the subject which previously occupied your mind. This continuity of purpose has been called by Dr. Stout *conative* con-

[1] James, *Principles of Psychology*, i. 239.

tinuity.[1] It is present in the highest degree in the man of set interests and purposes, and it is at a minimum in the abrupt capering of the child's mind.

We see, then, that our behaviour under new circumstances is already partly determined by certain tendencies which experience in the past has produced. It is to this persisting effect of experience that we refer when we speak of the *Retentiveness* of mind. My actual experiences are not retained in their original form, but they leave effects which can be traced as factors of subsequent mental behaviour. These factors are called *Dispositions*. Thus, whenever I rise in the morning, I make straight for the bathroom to wash. I do not think of my early wash all day in order not to forget it next morning. It is my habit to wash at that hour—that is to say, previous experiences have been so frequently repeated, that the disposition to wash when I get out of bed is strong enough to act unfailingly. Again, to take another instance, it may be that whenever a certain man crosses my path, I experience a disagreeable sense of dislike, owing to unpleasant passages between us in the past. The feeling does not arise in his absence, or at any rate when I am not thinking of him. It is just a tendency which fulfils itself whenever circumstances are favourable, and so in ordinary language we speak of one man as well or ill *disposed* towards another.

§ 4. The Three Chief Points of View from which

[1] This word 'conative' will be more fully explained in the next section.

Mental Behaviour can be regarded in Psychology. We may now ask the student to notice certain broad aspects of his mental life which have been implied in what we have already said. We have, for example, already noticed the fact that purposiveness characterizes the behaviour of the dog, and indeed that this quality is significant of mental activity in general. The student will recognize at once that he is not a merely passive being, such as a stick tossed by the tide seems to be. He feels himself to be a craving and a striving force, not content to be the sport of his environment, but actively fitting himself to it or adapting it to his own needs. This feature of mental behaviour is what the psychologist has in mind when he calls it *conative* (from the Latin *conari* = to strive). He means that it is purposeful or, at any rate, purposive—that is to say, it is always tending to some end which will give satisfaction.

But, secondly, the student will notice that this purposive activity is not a mere striving of which nothing more can be said. He will see that there is awareness of some sort at every stage. Every conative process is, at the same time, an intellectual process, if we may use the word 'intellectual' in so wide a sense as to include at one extreme the mere sensible apprehension of an obstacle which leads a fly on the window-pane to change its direction, and at the other the clear thought of a principle of duty which enables a man to resist temptation. The fact that mental activity is always a process of 'knowing' in some way is expressed by the psycho-

logist when he speaks of the *cognitive* aspect of mental behaviour (Latin, *cognoscere* = to know). All mental activity takes its rise in some sort of knowing (cognition), and by cognition its every step forward is guided.[1] Your attempt to observe yourself, for example, arises from the thought—a cognition—that in order to understand psychology you must do so; and every stage of your self-observation is a further stage at once in the *conation* or purpose, and in the understanding or *cognition* of your own behaviour. Not less is the behaviour of the fly on the pane a cognitive process, though, of course, its cognition is very meagre, and not what we should in ordinary life call 'knowing'.

The student will, however, be sure to say, and rightly, that we have not yet exhausted all that he finds in his own mental behaviour. He is not merely a striving and knowing creature, making towards ends and aware of objects. We have left out all the warm tints, all that intimate character of his life that seems to be most peculiarly himself. We have left out his feelings, namely, what the psychologist calls the *affective* side of mental behaviour. Our experience is not merely conation + cognition; it is, at the same time, a being affected in some way, a mode of feeling. Just as the effort towards adjustment of self and environment is

[1] Cognition is a better term to use than 'knowing', because there is a stricter sense of the word 'knowing' in which it is opposed to merely perceiving or fancying or casual thinking. Cognition covers every kind of awareness of objects.

not bare effort (which is meaningless), but is, looked at from another side, a process of cognizing objects, so from still another point of view it is a process of feelings. In one and the same experience we strive towards an end: we are aware of objects: and we are affected in our feelings by the course of the experience. Even the fly, we may presume, feels some vague pleasure in its unimpeded progress, finds an obstacle in some way unpleasant. Certainly we are never without feelings, though, of course, they vary enormously in strength, from the vague pleasure that accompanies a calm reverie, to the sharp cutting shock and disturbance that are caused by sudden reverse or disappointment.

As a result of this survey of his own mental behaviour, the student will have found that it presents three main aspects. He must, however, be careful to remember that they are only aspects. At any one moment he has only one experience, not three; and this one experience is at once affective, and cognitive, and conative.

§ 5. **Some anticipations.** The next succeeding chapters will be occupied with a general sketch of infancy and of the child's acquirement of language, and after that the student will have to consider the conative, affective, and cognitive aspects of mental behaviour in that order. But the very fact that they are never really separate makes it impossible to treat of one without referring to the others; and it is therefore desirable that the student should at the outset con-

sider in brief some of the main characters of feeling and cognition, anticipating the fuller discussion which will be found in later chapters.

Let us take cognition first. As we have seen, the term covers every kind of awareness. Now, whenever we are aware, we are aware of something, or (to put the same thing in other words) our awareness always has an object. But these objects of which we are aware vary greatly in their character, and correspondingly there are different modes of awareness or cognition, which have their special names.

At this moment you see this printed page; perhaps you hear a noise from outside, or notice a cold draught from the window. This sort of awareness involves the aid of the senses: if you were blind, you could not see this page; if deaf, you could not hear that noise. The general name for cognition of a particular object present to the senses is *Perception*, and the object as it is perceived by you is often called a *Percept*. This is the first kind of cognition to develop in the child. Now consider your perception of this page more closely. Leave aside your knowledge that it is a page of a book with printed words on it: what do you see? Strictly speaking, you see a white surface, evenly lighted, with black markings on it. So much you owe to the activity of your sense of sight at the moment. You are therefore said to sense or have *sensations* of black and white—and similarly of colours, and sounds, heat, cold, touch, pain, odours, tastes, &c.; and these blacks, whites, colours, and the

rest, as you sense them, are called *sensory objects*.[1] Your perception of this page, then, includes sensations —visual sensations—but it includes more than this. For instance, you perceive that the page is smooth. Now smoothness is a quality which first of all is apprehended by touch and not by sight, and it is only after a fairly long experience that you have learned that when you see certain distributions of light and shade, you are looking at a smooth thing, and when the distribution of light and shade is different you are looking at a rough thing. So perception, though it always includes sensing or sensation, always includes more also, and this 'more' is due to your past experience.

Now shut your eyes and try to picture this page to yourself, as most people can more or less clearly. If you have any difficulty try to call up the sound of your own voice, the 'feel' of a piece of velvet, or the taste of an onion. You are in each of these cases aware of an object in a way which would have been impossible had you not at some time or other perceived it. At the moment, however, you have no actual sensations of seeing, or hearing, or touching, or tasting, as the case may be. Cognition of this kind is called *Imaging*, and the object is called an *Image*. You can probably also combine these images, or parts of them, into wholes which you have never perceived, which indeed may have no objective existence. If you could put together in your mind the smell of a

[1] They, too, are called sensations, and the ambiguity gives rise to many confusions, though perhaps it is unavoidable.

strawberry, the shape of a banana, the rind of an orange, and the internal texture of an onion, you would *imagine* a fruit unknown even to Covent Garden. Similarly, from a description in a book you may imagine, or construct an image of, the features of the heroine or the appearance of the house she lived in.

But besides perceiving and imaging and imagining objects you can also think about them. You may, as we have seen, picture this printed page 'in your mind's eye', but now, instead of doing that, you may think over the subject-matter of which it treats. You may say that the statements contained in the paragraphs are quite clear, or that you do not follow the argument at this point or that. Or, again, of that new fruit you were asked to image, you may decide that it would not be a pleasant thing to eat, or that it would be necessarily a tropical fruit, and the people in whose land it grew would be dark-skinned. Such acts of affirming or denying and reasoning (and with them we may for our purpose class wondering and doubting) are all acts of *Thinking* or *Thought*. We may, of course, perceive a thing at the moment we are thinking about it, or we may image it; but we need not do so. If I say, 'The king has just started on a long journey,' you may understand me perfectly without seeing or ever having seen the king, and without picturing him to yourself. You can think about objects which it is impossible to perceive or imagine, e.g. electricity, manliness, parliamentary government. Objects of thought as distinguished from percepts and images are

called *Concepts*, and apprehending them in thinking is called *Conception*. Consideration of the nature of the distinction between conception and other modes of apprehension must be postponed;[1] it will be enough for the present if the student realizes (as he will do after a moment's reflection) that thinking about a thing is different from seeing or hearing or touching it and from imaging it.

Let us now turn to the third aspect of consciousness, which is particularly interesting to each of us, inasmuch as it represents the most intimate side of our experience. We are at once met by a double difficulty in respect of vocabulary. The popular use of the words 'feel' and 'feeling' is confusing. We say that we feel cold or feel a pain in our arms, or feel something touch us, just as readily as we say that we feel pleased or sorry or angry or happy. Now cold and contact and physical pain are not feelings in the psychologist's sense. They are all sensory experiences; we apprehend them because of the excitation of one or other of the organs of sense. Every one will recognize that we have a sense of touch, and as a matter of fact we have also senses of temperature and of bodily pain. Thus we may say that cold and contact and pain are objects of cognition, and not feelings or affective states.

The most obvious feelings in our sense are pleasure and its opposite, and it is here we come across our second difficulty. To use the word 'pain' for the opposite of 'pleasure' again involves us in the danger

[1] Cp. ch. xii.

of confusing it with the bodily pain which, as we have seen, is a sensation. We propose, therefore, to call this opposite, for which no convenient word exists in our language, *unpleasure*. What it is to be affected pleasantly and unpleasantly we all know well enough. Perhaps it is not quite so obvious that between the two lies a neutral state of feeling; yet we often experience it when engaged upon some routine occupation, such as entering marks on a mark sheet, that neither positively interests nor positively bores us.

Not less intimate states of ourselves are indicated by words like 'fear', 'anger', 'joy', and the like. As we shall see, however, in a later chapter, these states are complex and not purely affective, and we call them *Emotions* to distinguish them from the simple feelings referred to in the previous paragraph. The student will realize their complexity by noticing the different way in which the feeling of anger may affect him, according as the object of his wrath is one for whom he has a strong affection or one to whom he is indifferent.

Somewhat different from the Emotions are those more enduring states we call *Moods*. They are not so disturbing as a fit of anger or other keenly felt emotion, but they tend to attach themselves to all our perceptions and thoughts. Thus an emotion of acute grief may pass into a quieter but more persistent mood of melancholy, and in that mood not only the thought of the cause of our grief, but every thought and prospect will appear in the blackest colour.

As we said in § 4, we may be called ill or well disposed

towards a person of whom we are not actually thinking at the moment. In the course of life, various systems of emotions come to cling to the thought or perception of different objects ; we are fond of one person, dislike another, we admire courage and despise cowardice. We are not always actually experiencing these emotions, but we do experience them if we think of these objects. These complex emotional dispositions have been termed *Sentiments.*

People seem to vary greatly in their natural susceptibility to different emotions and moods. Some, for instance, are constitutionally cheery, others of a melancholy turn. These permanent differences in susceptibility are called differences of *Temperament.* They are of great practical importance, but of their cause little or nothing is known.

References for Reading

§ 1. On analysis cp. Stout, *Analytic Psychology*, Bk. I, ch. ii ; *Groundwork of Psychology*, pp. 10–11.

§§ 2–3. Cp. James, *Principles*, i. 6–8, 229–56 ; Royce, *Outlines of Psychology*, ch. iv ; Stout, *Analytic Psychology*, i. 21–4, *Manual*, Bk. I, ch. ii.

§ 4. Cp. Höffding, *Outlines of Psychology*, ch. iv ; Mitchell, *Structure and Growth of the Mind*, lecture iii ; Stout, *Manual*, Bk. I, ch. i ; Ward, article 'Psychology' in the *Encyclopaedia Britannica*, 11th ed., pp. 551 ff.

CHAPTER III

INFANCY

§ 1. Native Endowment. Our sources of information in regard to the mental life of young children are necessarily indirect. A baby cannot tell us what is going on in his mind, and older children do not commonly lay bare the details of their mental processes. Adults often recount their childish experiences, but reminiscence of that kind contains too many sources of error to make it very useful to the scientific study of the subject, and, in any case, it rarely pretends to throw light upon the mind of a child less than a year old.

The most striking thing about a newborn infant is his absolute helplessness. He compares most unfavourably with a newborn lamb or a pup, for example, and, whilst the sheep is mature in twelve months and the dog in two years, we know that the infant we are looking at will not be recognized in law as a fully responsible person until he is twenty-one, and that his bony framework will not be complete until he is twenty-five.

This infantile helplessness and prolonged immaturity are not, as we see, common to the whole animal kingdom. Many animals, indeed, are born with so complete an organization that they can live from the first without any parental oversight. Broadly speaking, one may say that the higher we ascend in the scale of

the animal world, the more dependent are the young upon their parents. A tadpole fends for itself as soon as it leaves the egg, a chicken is semi-independent from the start, a pup needs its mother for two or three months. A baby is a nursling until it is nearly a year old, when in all probability he is just beginning to walk.

Let us observe the young baby more closely, with a view to discovering more exactly what his initial equipment is. We notice at once how large a proportion of his life is spent in sleep; but alike when he is asleep and awake, the movements of his heart, of his breathing and digestive apparatus, complicated as they are, go on automatically. Again, if you place your fingers in his, he grasps them; if his throat tickles, he coughs; he sneezes also perfectly. When he is hungry he wakes and cries. If you put your finger in his mouth, he stops crying and sucks hard for a short time, only to cry again when satisfaction does not come. The infant has not learned to do any of these things. He has inherited the machinery which makes them possible, and the sensitiveness to external stimuli which sets the machinery in motion.

Thus in the first few weeks of his life he shows a certain very limited capacity for adjusting himself to his environment—that is to say, for taking advantage of circumstances favourable to his organic needs, and for protecting himself against unfavourable elements in his surroundings. Movements of the kind indicated we call either reflex or instinctive movements.[1] But

[1] For some further account of these movements see ch. v, §§ 2 ff.

the child we are watching moves in other ways which are not apparently the result of outside stimuli. His arms and legs, his face and eyes, move in what appears to be a random fashion. These random movements may seem to have no immediate purpose, yet the part which they play in the child's development is probably very important.

We notice that the little one has eyes, ears, nose, and hands like our own, but that he does not look or listen or touch or smell things as we do. Light and sound affect him, his pupils enlarge and contract under the influence of the former, and a loud noise makes him start, but there is at first no active use of the senses such as we see in a child who is running about. The newborn baby is a mere bundle of possibilities of development, which takes its start in the reflex, instinctive, or random movements just mentioned, and in the sensitiveness to sensory stimuli which many of these movements presuppose. We must not, however, suppose that these stimuli produce results in the infant's consciousness such as they would produce in ours. We have learned by experience to recognize and classify impressions as impressions of sound, sight, touch, &c. The babe has had no such experience, and his sense-impressions must be a confused, almost meaningless series, which life alone will clear up and make significant.

§ 2. Growing Interest in Sensory Experience. It is not, however, very long before the infant begins to make distinct progress. Before he is a month old he

takes up amusingly definite attitudes towards particular sensory objects. He prefers sweet food, and refuses what is acid or bitter. The expression of his likes and dislikes becomes more and more definite, and we cannot miss the meaning of the movements of his lips and tongue by the time he is three months old. Loud noises commonly frighten him at a very early age; fear or discomfort often makes him cry. On the other hand, musical and rhythmical sounds attract his attention, and in the third month will awaken a smile. He is a listener now, not a passive hearer.

The movements of his eyes show interest in light and shadow. He will fix them on the object which casts a shadow over him, and presently he will follow an object moving slowly between him and the light. In the fifth week, a bright thing will arrest his eye, and even stop active fretting. Perhaps he will even turn his head to follow a moving candle which has attracted his attention, and if you hold him up to your shoulder, he will straighten up his head and peer around as if trying to see all there is to see—an occupation from which he seems to derive especial pleasure, until he feels the joy of handling things. This particular joy comes somewhat later, for although his fingers already twine round a small object put into them, the movement is probably nothing more than the reflex which is present from birth.

With the advancing weeks the movements of his arms and legs grow more vigorous, but they do not quickly become purposeful, or even thoroughly

co-ordinated. He can perhaps hold a rattle in his hand, and the spasmodic movements of his hand make it 'speak'. The sound is attractive to him—his eyes open widely, he is absorbed in vague wonder, but he does not connect the sound at first with his movements or even with the object. This is typical of his whole experience, which is but a varied play of sense, continuous but bearing no intelligible message, giving organic pleasure or pain, as the case may be, but having no further meaning for him. Bright colours, noises, musical sounds, warmth and cold, and the like all affect him. He smiles or crows, cries or goes to sleep under their influence, but he has still to learn what those pleasant or unpleasant happenings really mean.

§ 3. How this experience gains significance (*a*) in connexion with organic needs, (*b*) in connexion with acquired dispositions. We have already noticed the infant's tendency to cry when he is hungry, and he will cry also at pain or any other uneasiness. The character of the cry varies according to the need which prompts it, and the child who is accustomed to be nursed whenever he is not asleep will cry as soon as he wakes, although not in actual pain, until he is back once more in his habitual waking position. This cry will be the more insistent, the more attentive his nurse has been. An occasional lapse on her part will bring loud protestations, not of bad temper or impatience, but of violent discomfort due to the break in the clockwork regularity of his life. Crying ultimately

brings relief, and it is worth while to notice more carefully the relation of this instinctive mode of expression to mental development.

Plainly the cry enables the infant to communicate with people about him, but he does not cry because he knows this to be so. He cannot help crying; it is an inherited tendency, not an individual invention. The nervous machinery which produces the cry stops working when organic comfort has been restored. But the restoration of comfort has been accompanied by other sensory experiences. The light has been partly cut off from his eyes, his prone position has been changed for one of rapid movement, and now he is hedged round by his nurse's arms and person, a position in which he opens his eyes steadily or possibly falls asleep. Every time that he cries something of this sort follows. The cry starts a sequence of experiences which end in this comfortable way, and they gradually become linked into a series, the first member of which sets up the reaction which really belongs to the last: the child learns to stop crying as soon as the nurse bends over him. But again, the sight of her bending over him has been preceded by other sensory experiences—the sound of her steps, or of the opening of the door—which also get linked on and come to constitute the signal which stops his crying, though he will soon begin to cry again if the links in the usual chain of experiences are not fulfilled, or if the end is delayed unduly.

All this is typical of what takes place in connexion

with all those recurrent happenings which occupy most of an infant's waking life—feeding, being washed and dressed, and being nursed. Absolute regularity in the attentions of his nurse is of course impossible, and when change occurs—a new voice, a new touch—it brings uneasiness and crying. Moments of this kind play an important part in the development of mind. If absolute regularity reigned, development would be impossible, though, on the other hand, if the environment were so changeful that the series-making which has been described could not take place, the situation would be equally unfavourable.

Precisely similar processes occur later in connexion with other forms of reaction. A small child of eighteen months is bored and fretful in the drawing-room in the early afternoon. Picture-books fail to bring peace, the word ' ta-ta ' (for ' going out ') brings a temporary lull, but nothing comes of it, and he begins to fret again. Suddenly his nurse appears with her hat on. Instantly he smiles, wriggles off his mother's knee, and runs across the room. His actual outing is still five minutes off, perhaps, but that matters little unless delay is unusually prolonged over dressing or other preliminary preparations, in which case he will relapse more decidedly into his former mood.

There are, however, some important differences between this case and that of the hungry baby. The child is appealed to by a word. The effect is short-lived because the sound is not followed up by the experiences with which it is usually connected. One

may compare the sound of the word in this case with that of the opening or closing of the door in the earlier series. Each stops the fretfulness, because it has in the past been an initial element in a series of experiences which has brought satisfaction, but if the initial element occurs in isolation, its effect is momentary. The relation of this to the acquisition of language we shall discuss in the next chapter. Again, the active share taken by the child in the development of the situation is in marked contrast to the attitude of the infant lying in his cot. He could not have said precisely why he was unhappy, and could not, therefore, set out to seek satisfaction; yet so soon as he sees his nurse, he acts as if her arrival were the one thing he had been vainly looking for. An adult would ordinarily know his own wants, and he would make the necessary preparations on his own account; the little child is uneasy and hard to please without knowing why. The right stimulus comes, and he is instantly engaged in purposeful anticipatory action. Not so the infant for whom experiences come constantly in such relative order that they are linked into series with characteristic beginnings, middles, and ends, but without help from himself.

Awareness follows upon change. The big differences, we may suppose, stand out first—those involved in passing from one series of experiences to another; next, important changes in those series. Gradually changes of a minuter kind are noted; the child's power of apprehending differences increases steadily.

This is a characteristic mark of advance in cognitive capacity.

But at the same time as the power of noting differences is increasing, there comes the tendency to synthesize or link up experiences. The important feature of this tendency is its fundamentally purposive character. The syntheses are not casual, but are determined by the actual needs of the child. From the very beginning there is an unconscious selection and linking up of those experiences which serve his interests. Later in life we form habits, or prevent their formation, by active effort, but we also are constantly slipping into complex reactions in response to the steady demands of environment, in precisely the same way as the infant; we automatically adapt ourselves to the more constant influences of a new environment, sometimes without actually noticing them. Thus a boy transferred from a class in which the discipline has been bad to one in which there is an atmosphere of order and work usually falls into line at once. The new conditions demand new adjustments which are made without effort, and whereas he may previously have been most active in mischief, he is now a conspicuously eager worker. He is not unaware of the change of atmosphere, but he responds to it in a hundred ways of which he could give no account.

To return to the infant, we have seen how he learns to attach meaning to sensory experiences which lead up to the satisfaction of his organic needs, and that at a very early period he begins to show interest in

sensory activity as it were for its own sake. As the weeks proceeded, we found him taking more and more pleasure in the play of sense. He listens attentively to pleasing sounds, he wriggles with excitement and pleasure and stretches out his arms when a bright object is swung gently before him. His own activities begin to arrest his attention. He will listen for long intervals to his own cooing and prattling or watch the restless movements of his own arms. Of course these movements are not yet 'his own' in the sense in which we speak of 'our own' movements, for they are not intentional, but probably are occasioned by organic changes going on in his body, which itself is still a stranger to him.

We have next to notice how these sensory experiences set up dispositions which constitute new needs. Now one and now another of them by entering into series acquires significance beyond the present moment, or stands out as the significant element in a complex to which considerable feeling attaches. The child cries when he sees the rattle over there because of the acutely felt incompleteness of the experience in which that visual element is prominent. There are sounds and movements in the complex as it has been ordinarily experienced in the past. That bit of colour, the sight of which makes him cry, is to the child just as bad as the smell of food that he cannot get to the hungry man, though he is not in a position to say or even to realize why he is unhappy. When we put the rattle into his hands, the 'music', the movements of his

arms, and the visual impressions combine to restore equanimity. Whether, if another person shook the rattle instead of putting it into his hands, satisfaction would follow, would of course depend upon what had usually happened in the past. In any case, the baby does not consciously insist on making the noise himself as his older brother might; such conduct would involve a much higher stage of intellectual development. All that has happened has been the unfulfilment of a situation towards which there has been a mental 'set', and the cry expressed the consequent discomfort. It has all come about as the result of previous experience, which has established a psychical disposition. The child may be said now to 'recognize' the rattle. When that patch of colour strikes his eye, or that peculiar sound reaches his ear, it is in each case only a part of all that the object is for him. Nevertheless, a wave of pleasurable feeling is at first aroused; then the experience is felt to be incomplete, and discomfort and crying follow.

His environment comes gradually to be systematized in the same way. His mother, his nurse, his bottle, his cot, his chair, and so forth are each the centre of pleasurable sensory experiences of greater or less complexity. Some outstanding element in the sensory complex strikes him and serves to excite expectancy of the whole group. He 'recognizes' his mother by her voice, his bottle by contact with his lips. Gradually the other sensory elements in the complex grow distinct. He learns to know the bottle by its appearance, his

mother by her face, and as time goes on the sensory basis of his perception of objects becomes more and more varied in its possibilities. In other words, we say his knowledge of objects becomes more detailed, his analysis of their sensory qualities becomes more perfect, and now he knows the ball when he sees it on the table, or on the floor across the room, or when he sees you bouncing it against the ceiling.

Along with and contributory to this advance in his power to interpret his immediate environment, an equally noticeable feature in the infant's development is the steadily increasing control over the movements of his arms and hands. His tactual experiences are at first entirely accidental. The child of three months throws out his arms in pure excitement when a bright object is swung before him. If it touches his hands, there is often an undirected fumbling movement which suggests to the observer that the child desires to seize the object. Should he chance to get his fingers round it, the object is held, but the fingers open spasmodically and it falls away. Brief moments of that kind, at first accidentally achieved, give satisfaction so great that the experiences immediately preceding them—the visual appearance of things within reach, the visual and muscular sensations accompanying the movements of the arms as they approach the object—are linked on to the experience of clasping, forming a series which becomes more and more distinct as it is repeated, until finally it becomes coherent and definite enough to serve as a guide when the object

before the eye starts the disposition to work out the series of experiences which have in the past ended so agreeably. Any spasmodic twitching of the arm is gradually inhibited by the firmness with which the joint series of eye and arm movements are established under sensory control delicately adjusted to the attainment of the desired end.

This development of motor control over hands and arms is preceded by control over the movements of eyes and head. Long before the child can reach out for and take things in his hands, he can follow moving objects by turning his eyes and his head in their direction. Thus he gradually learns that the same things have different appearances at different times: he knows his mother, for instance, whether she is at the other side of the room or close by him.

But control over the movements of his hands gives him a much more powerful instrument for the appreciation of the spatial qualities and relations of things—their shape, their position, and their distance from him. Again, we find the gradual enrichment of sensory experience accompanied by growing analysis which results in any one element of a complex coming to stand for the whole. Before he first handles things he cannot connect the visual appearance of (say) a ball with the qualities of roundness and smoothness which really belong to it, and similarly as regards the other shapes of solid bodies; but gradually the visual experience of the object (e.g. the distribution of light and shade on it) is enriched by experiences derived

from touching it and from actively exploring it with the hands, and any one element of the complex experience comes to mean the whole for the child, so that when he sees the ball he apprehends it also as it would feel if he handled it, and when he touches it in the dark he apprehends it also as it would look if he saw it.

Gradually, too, he learns to distinguish the appearance of things within reach from that of things that are beyond—his first step towards the estimation of distance. Presently he will be able to roll or creep across the room, and differences in the visual appearance of familiar things will come to be associated with the motor experiences involved in getting to them. Then he begins to learn to walk. Already at six months, contact with the soles of his feet induces a reflex stretching of his legs which makes him able to stand erect if we support his sides; a little later, and that same contact will induce a swaying of his limbs which suggests to us (though prematurely) a desire to walk.

§ 4. **The Child at One Year of Age.** He is now a year old or thereabouts. Let us try to sum up his acquirements. He can, in the first place, move about either unaided on all-fours, or on his feet with more or less help from his elders. He can take up things in his hands and play with them. Most often the play consists in hammering the object on a table or chair; it is just a 'sense play'; the noise and the movement delight him. He has not only gained considerable power in initiating movements, he has also acquired a large amount of control over what were originally

random movements. His delight in movement and in the active use of his senses is shown too in his ceaseless babble; he loves to play with particular syllables, uttering them over and over again. His tendency to imitate is very pronounced; in this way he may have learned to say 'mamma' in the presence of a particular person, and may have acquired other baby-names for objects that are associated with his keenest feelings. His perceptions awaken desires which are relatively definite and strong, and he is already acute enough to know which of the objects about him can best help him to get what he wants. It is to persons, not to inanimate things, that he appeals. His deficiencies in linguistic expression are helped out by expressive and emphatic gesture. His eyes, his arms, an almost inarticulate grunt tell us what he wants, and if he wants it badly, he rejects substitutes with expressions of anger and disgust. He is also commonly making his first essays in independent purposeful action. When he is tired of playing on the floor, he makes his way to his nurse, tugs at her dress, and half articulately asks to be taken on her knee. Though his own words are very few, he understands a considerable number of the significant sounds which he constantly hears used. Words like 'nurse', 'mother', 'baby', 'bow-wow', 'din-din' (dinner), perhaps 'book', and the names of members of his family have meanings definite enough to make him look up and around in search of the objects they stand for. He is particularly sensitive to tones of voice: the same word spoken

gently and spoken roughly will have a very different effect upon him. A well-trained child will already have learned that there are some things he may and some he may not do. A warning cry from his mother or his nurse will make him take his fingers from a forbidden object. He will sometimes hover over it, stretch out his hand towards it, even put his fingers gently upon it, looking up to his mother in a roguish semi-defiant way, as if he were already conscious of a conflict of wills and were feeling the piquancy of the situation.

Individual children naturally vary greatly in the details of their achievements at this age. Very much depends upon health, which again is largely dependent on proper feeding and fresh air. Other factors in the environment will influence the result. A sleepy sentimental nurse will be less stimulating to the infant intelligence than a bright, healthy-minded, playful one, and the presence or absence of young children means much, as soon as the imitative tendencies of the infant are alive.

References for Reading

The student will understand that this sketch of the psychology of infancy does not pretend to be complete. Its aim is to bring out certain fundamental features of mental behaviour in their earliest form. Some of the topics here touched upon will receive fuller treatment in later chapters. In addition to the classical works of Perez, *The First Three Years of Childhood*, and Preyer, *The Mind of the Child*, the student will find Major, *First Steps in Mental Growth*, a concise and useful treatment of the subject.

CHAPTER IV

LANGUAGE

§ 1. Speech. From about the end of the first year onwards, the most conspicuous fact in the child's development lies in his growing power of speech. The native impulse to make use of his larynx appears at birth in his first cry, and the success with which the cry of discomfort brings succour adds the strengthening effect of experience to the native tendency. Later his cries are differentiated; hunger, pain, 'disappointment' or 'temper' each gives a characteristic character to the cry. So far, his vocal efforts have produced only vowel sounds, but when the infant is two or three months old, you may often hear him cooing and playing with consonantal sounds which were at first produced by accidental movements of lip, tongue, and palate. The whole result gives him so much pleasure that he spends many of his wakeful moments in the 'game', gradually acquiring in this way control enough to make rough imitations possible. At seven or eight months perhaps the first attempts to reproduce the sounds he hears may be recognized. But his syllables do not yet mean any object for him, even though, as is very likely, he may pronounce what will ultimately be significant sounds, like 'ma-ma', 'na-na', &c. In observing a child, we need ever to be on our guard lest we should

attribute our ideas to him, and see in his words an expression of them. His vocal imitations are, in the first instance, quite meaningless, and are conditioned chiefly by the relative simplicity of the muscular action involved.

Long before he can himself use significant syllables, he understands a great deal of what others say to him. He will give his hand, wave a good-bye, kiss his mother, look for objects and persons who are named, as his nurse directs. We must note, however, the strict limitations of this understanding. We say to a child of nine or ten months, 'Where is tic-tac?' and he looks round guided by the familiar setting, until his eye rests upon the clock. He does not understand what a clock is, and if we took him to another room and asked the same question, he would, in all probability, break down. The perceptual complex of which the sound 'tic-tac' is part would then be unfamiliar; in the past he has heard the word when his eyes were fixed upon a particular object in particular surroundings. Just as when we see a yellow spherical object on a plate, we may quite absent-mindedly put out our hands to take an orange without any thinking about it, so the sound 'tic-tac' leads to a series of movements of head and eyes until the customary group of percepts to which that sound is attached is complete. From the point of view of his development, the importance of what has happened lies in the prominence which it gives to a vocal sign. It is the first stage in the process which leads ultimately to language.

We see it developing a stage further when the vocal sign is linked to sensory series (or groups) which are ordinarily very pleasurable. 'Where is mother?' says the child's nurse. He looks eagerly about him, as it were in anticipation of further sensory experiences, which may not, however, follow in the customary way. The pleasurable feeling which was stirred in its beginnings is checked in its development, and the little one cries. Words in such circumstances rapidly gain significance; they happen also to be (in their nursery form) the words the child hears oftenest. His imitative tendencies lead him to say 'mama', 'dada', 'nana' (nurse), at first in mere chance connexions, and then as control begins to develop the word comes from the child in presence of the usual object—completing the perceptual group to which the sight of his mother, her voice, and the sound 'mama' belong. Objects which are commonly named by similar duplicated and easy syllables 'tic-tac', 'bow-wow', &c., and which are also often presented to his notice, gradually provoke the utterance of their names when he sees them. This marks the second stage—we may call words when used in this way percept-words.

But language would not develop further unless the child himself had something to say. So far he has been, through perception and imitation, simply paving the way for the discovery that in these sounds he has a simple means of conveying his desires more precisely to his neighbours. He wants one of half a dozen things on the table in front of him, and he stretches and crows

in a vain effort to get it. His nurse must offer first one and then another thing until she chances upon the right one. Could he only have said 'ball', he would have got what he wanted at once! He does not reflect in this way, of course, but experience teaches him, for he finds that the percept-word uttered by chance brings the desired object within his grasp. Hence arise his earliest attempts to speak independently—to express himself. He wants something, and wants it intensely, and all this is put into a single syllable, accompanied by forcible gesture and energetic movement.

The fact that his words are frequently connected with his feelings rather than with any characteristic of the object itself, comes out in another way. He will often apply words associated with keen pleasure or painful experiences to objects entirely different in themselves from those to which they properly belong, should these objects happen to excite in him corresponding feelings. Preyer tells how his child who had learned the word *Burtsa* (*Geburtstag* = birthday) used it subsequently for everything which excited great joy within him. But his vocables do not in such cases represent what we call general notions. They express momentary attitudes towards things. Psychologically, they are not unlike the interjectional utterances of older people.

On the other hand, we notice him using the same sign in circumstances so different that we are surprised at his seeing the fundamental agreement amongst

them—an agreement which justifies the common application of the word—' thus " dow " (down) may mean " the spoon has fallen down ", " I am down ", " I want to go down ", &c.' The meaning in each case is made clear by appropriate gesture and the special circumstances. The interesting point is that the child seems to have begun to pierce the variety of his external environment, and to see the common features underlying it. Every mother has noticed the unexpected freshness with which her baby will apply a phrase like ' all gone '. She is often surprised and amused, but she can always see the intellectual justification.

We have already pointed out how vocal signs enter into perceptual complexes, and how the child himself will often supply the vocal sign when the remaining part of the complex is perceived. He says ' dada ' when a particular person comes into sight. But when he is facile in his use of the word, he shows that his analytical powers are weak, for he will say ' dada ' sometimes when his uncle (or any other man) is there instead of his father. Somebody says ' No, not dada—uncle ; say uncle, baby '. This is typical of the way in which we use words to point out differences in things to our little ones. We direct the child's analytical processes in this way, and this is happening constantly when we have no thought of teaching him. Thus he has learned to call the family dog, Carlo ; another dog appears on the scene which is not ' Carlo ' but ' Spot '—yet we call them both ' bow-wows '. Here the child

is led to discover the common attribute which he may later call the bark; the animals are otherwise so different that this might not have struck him unless the common name had compelled his attention in that direction. But when we see likeness between things, we mentally put them together—that is to say, it is an act of synthesis. Thus by our use of words we lead small children at once to divide things from each other by insisting on their differences, and to group them together by drawing attention to their likenesses, helped out as the words must be in the beginnings by much gesture and circumstance.

The increase in a child's vocabulary means, therefore, a gain in analytic and synthetic power-- a gain, that is to say, in his power to think. This gain reacts upon every phase of his mental activity. He discriminates his sensations more acutely; the child who has only one word for red, where we have half a dozen or more—pink, scarlet, crimson, ruby, rose, vermilion, &c.—probably has not yet learned to notice the differences they represent. His percepts are similarly enriched. The boy who has learned words like stamen, pistil, petal, sepal, under proper conditions sees more in a glance at a flower than one who knows nothing of botanical analysis. At the same time, we may note that children often pick up the words and phrases of people around them, with very little idea of their meaning. The child who would in some parts of this country be called 'old-fashioned' is a case in point. He uses his parents' phrases on

what would be for them suitable occasions, but the words do not bear the adult significance; they are often nothing more than the percept-words of early infancy.

But let us look at the growing linguistic power of the young child from another point of view. At first, his words are provoked by the perception of the objects for which they come ultimately to stand. He hears a familiar voice and calls out 'nurse'. Probably with the voice and the word there is also in his mind a visual picture of her. Other circumstances may call up that image, and provoke the word. So long as words stand for particular things, this imagery would remain attendant upon their use, but this of course does not last very long, and when 'bow-wow' comes to be used for dogs of all sorts, the imagery attached to the word in the first instance would be inappropriate, and it tends to wear away. With the growth of experience, these relics of the original perceptual complexes to which our early words belonged disappear, and it may be only when a halt is called, and we purposely stop over a particular word that the appropriate imagery rises in consciousness. (There are, no doubt, great individual differences in respect of the imagery attached to the adult use of words, but what has been said represents a general tendency in normal people.) This gradual falling away of precise and detailed imagery makes the words much more valuable as instruments in mental development. They come to be applicable to a large number of objects which, in spite of great differences of detail, are recognized as

having certain fundamental qualities in common. The tendency to see the likeness in the midst of variety is very marked in the child. He learns very rapidly to know 'pussy' whatever its colour, and to say 'gee-gee' for horses of all sorts, whether in the picture-book or in the street.

Of course, a child makes many mistakes in his general progress, viewed, that is to say, from our adult standpoint. Psychologically speaking, he is justified in using the word which represents for him the significant feature in his experience. He may call all four-legged things 'bow-wow', and all birds may be 'quacks'. Not infrequently an accident may be seized on as a distinguishing mark—all ladies who wear caps are grandmothers. The strangest transferences sometimes take place, as one circumstance after another recalls its predecessor with which a word is linked. Minto's child called his nurse 'Mambro', and extended the application of the name to the sewing-machine, then to a street-organ on which a monkey was seated, and finally to his own india-rubber monkey.

It is we adults who insist on his gradually falling into accepted usage; or the child's own necessities combine with our efforts to bring him into line; he finds in experience that such and such signs are understood, and he abandons his failures. Imitation helps him enormously, not only in matters of pronunciation, but in learning appropriate words, and in their apt employment. As we have seen, the constant checks we exercise upon him help him to correct

analysis and appropriate synthesis; his use of words exposes his errors in both directions, and we sharpen his apprehension of likeness and difference by pointing out his mistakes.

A child may acquire an extensive vocabulary—he may be able to name when challenged all the objects round about him—before he rises to the use of more than one word at a time, but we must not forget that many times when he uses only single words a whole sentence is implicitly there.

Until he is eighteen months old the child rarely advances beyond sentence-words, though he will often string a number of such words together, 'Ba'—faver—garden.' ('Please, nurse, give me the ball: father will play with me—not in the nursery but in the garden.') In such cases the circumstances of the moment and the child's gestures make his meaning clear. He has yet to learn to speak in such a way that he can make himself understood at any time and place and independently of gesture. The essential factor underlying his progress is increasing capacity for analysis. The child, that is to say, becomes conscious of the various elements which make up a particular situation, and with this increase of analytic power there comes greater grasp. The situation is seen more clearly as a whole by reason of the clearer knowledge of its parts. The growth of the sentence corresponds with this intellectual growth. We may summarize his progress thus:

Stage I. (Sentence-words, little analysis, vague synthesis.)

Knee. Mamma, knee.

Stage II. (Sentence still incomplete, but contains a step further in analysis, and shows correspondingly greater mental grasp.)

Want mamma knee.

Stage III. (Complete sentence.)

Baby want mamma knee.

Beyond this, of course, analysis and synthesis may go to any extent. Compare, for example, 'Baby wants to sit on mamma's knee' and note the increase in subtlety of analysis and the completer grasp of the general position which is shown when he says 'Please, mother, may I sit on your knee?' Adjectives and prepositions, conjunctions and adverbs, each in turn enter the sentence's structure, marking intellectual as well as linguistic advance. Conventional order of words is a matter of indifference to the child. He gets into customary lines by imitation. The significant use of inflexions marks, however, a further advance in mental power, and here again he makes many original departures from traditional forms, mixing regular and irregular verbs, for example, in a manner often charming by its novelty, e.g. 'brungded' (brought), 'bented' (bent), 'wan' (won), 'swang' (swung). Negatives seem to be particularly difficult, especially in such forms as nobody, nothing; and most children are, for a time, uncertain of their personal pronouns. They are so commonly addressed as 'you' that we might naturally expect them to speak in that way of themselves.

§ 2. **Reading and Writing.** At school a child who has a tolerably effective command of oral language is faced at once with the double difficulty of learning to interpret and to use a new system of significant signs which have only a very irregular relation to the elementary sounds which he is taught to recognize in the spoken word.

From the psychological standpoint, the teacher's immediate difficulty comes from the fact that the child has in the first instance no idea of what the teacher is driving at. He has to learn that the strange pictures he is looking at have a message for him, just as he learned earlier in his life that the sounds around and about him were meaningful. When he has caught this idea, a great advantage has been gained; his impulses will now be in the right direction, though he may not be conscious of any desire to learn. It is not our business to follow out the methodology of the subject, but the conditions of success will be found by considering the circumstances under which the child learns to speak and to understand what is said to him, and making use of the psychological material (the child's interests, his present vocabulary, his instinctive tendency to adapt himself as adequately as possible to his environment) which the child himself puts at the teacher's service. It may also be useful to point out that the skilled reader sees words, and even phrases, as wholes. He is barely conscious of the separate letters; that would be a positive hindrance to efficiency. The teacher must therefore take heed lest

he makes the letters themselves too interesting; in so doing he hinders rapid progress.

Learning to write his language is for the child a slower process than learning to read it. He has to form an entirely new set of very complex motor habits. Habit rests upon practice, but, in this case, the practice of actual writing must be preceded by manual exercises of a simpler kind, which gradually increase the powers of muscular co-ordination. The student will readily find that he is not conscious of the letters he is making as he writes. He thinks, so to speak, at the tips of his fingers. Until his pupils have established this immediate connexion between their thought and its manual expression, he will find their written work a less adequate key to their minds than their oral utterance. The pedagogic problem is how to expedite the establishment of this direct connexion between thinking and writing.

References for Further Reading

Judd, *Psychology*, ch. x; O'Shea, *Linguistic Development and Education*, chs. i–vi; Major, *First Steps in Mental Growth*, ch. xv; Stout, *Groundwork of Psychology*, ch. xiii (best read after the chapter on Conception in this book); Huey, *Psychology and Pedagogy of Reading*. The student would do well to read the chapter on Language in Tylor's *Anthropology*.

CHAPTER V

PURPOSE

(1) THE CONTROL OF MOVEMENT

§ 1. The Dominance of Purpose. On more than one occasion the fact has been emphasized in previous chapters that mental behaviour is predominantly purposive. Though, of course, he has not always got some great scheme in his mind, to the accomplishment of which all his activities are bent (for, as we have seen, people vary very much in their capacity to work for a remote end), yet every one knows that he is not a merely passive being, receptive of impressions from things and persons about him, and that his thoughts and acts are not purely capricious and disconnected, but are directed towards some end or other, the realization of which will bring more or less satisfaction.

Apart from the random movements which are characteristic of infancy but never wholly cease, though they are far less marked in later life, all our movements are of the nature of adjustments to our environment, and it is a useful way of regarding the development of mind to think of it as a growth in the capacity of finer adjustment of the self to the environment. In so far as the environment is constant and a steady and appropriate response is provided for by a purely physiological mechanism, there is, as we

have seen, no need of consciousness; breathing, for instance, under normal circumstances goes on unconsciously whether we are asleep or awake. There are also many acquired dexterities in the performance of which consciousness becomes a subordinate accompaniment or even drops out altogether. Thus to think about our movements just before we make them when we are riding a bicycle would be a very serious impediment.

But if by chance one breathes some unusual gas which has a choking effect, or if one's bicycle runs more stiffly than usual, and in general when the environment is of a kind to which no regular motor response exists or to which the regular response is less appropriate than usually, consciousness inclines to be present. The unusual stimulates mental activity, whilst routine gradually deadens it—so far, that is to say, as concerns the particular routine behaviour in question.[1]

Compared with other animals man has far more means of adjusting himself to his environment. He is not confined to the impressions of the moment. He may be quite indifferent to his present surroundings, if they are normal and may be left to automatic response, whilst he is occupied with thinking what he will do to-morrow or next week under circumstances which he foresees will give rise to difficulties. Or, if the present demands it, he has powers of scrutiny which, guided by clear knowledge of what he wants,

[1] Cp. pp. 38 ff. The account of the infant's responses to his environment illustrated this point.

general principles of action in like cases, and the lessons of his own experience, give him a great advantage. His powers of judgement and reasoning are his supreme means of adjusting himself to his varying circumstances.

This superiority is matched by the greater complexity of his environment, which we must not identify merely with the physical world, though even this is for him more than merely what he perceives : thus the primitive savage and the modern European are both familiar with eclipses, and may both see the same eclipse, but they will conceive its nature and conditions in very different ways, and their response in conduct will vary accordingly. But still more is man himself responsible for the social and spiritual environment in the midst of which he lives and to which he must adjust himself, or which he must so influence and alter that his needs are met by change in it. Notice, too, how unreflectingly such adjustment often takes place. An Englishman's standards of life and duty, for example, have often entered so completely into the fibre of his being that he is scarcely aware of them or of the presuppositions which they involve ; he scarcely realizes that other points of view are possible. Travel brings a vivid awakening, and he has to take stock of his position in order to determine his attitude towards the new ideas which new experience forces on his attention.

This brief statement of the relation of the individual to his environment will suffice to show that developing capacity of adjustment involves the interaction of

two tendencies, that towards Habit, in which consciousness inclines to disappear, and that towards Intention or Conscious Purpose, in which the higher forms of conscious activity become more and more important. Now sooner or later both Habit and Purpose must express themselves in movement, but until bodily movements are under control very little can be achieved. (Absence of motor control is indeed a familiar symptom of mental deficiency in children.) It is therefore necessary to consider the nature of our unlearned movements and how they gradually come under control.

§ 2. Reflex and Random Movements. We have already referred briefly[1] to the initial equipment of a baby in this respect. His movements are partly reflex—that is to say, they are definite reactions of definite muscles to definite stimuli of sufficient strength, and partly they are random or spasmodic.

By means of reflex automatic movements the regular domestic routine of the infant's body—breathing, the activity of the heart, and so on—goes on without conscious guidance or intention from the first, and other reflexes such as sucking, swallowing, crying, are also original. But most reflexes appear gradually, that of blinking, for instance, very soon, those involved in walking not for some time. None of these movements are intentional or purposeful, but they are all under ordinary circumstances advantageous to the organism, and in this sense may be called purposive: there is

[1] Cp. pp. 37-9.

a sort of inherited purpose in them. At a later date some of them come more or less perfectly under voluntary control; thus we can often prevent a sneeze, and we can alter the pace of our breathing, but on the other hand we cannot modify the reflex changes in the pupil of the eye occasioned by changes in the intensity of the light which enters it.

Many reflex movements occur in entire independence of consciousness, but others are usually or often preceded by and accompanied by some more or less dim awareness. This is the case, for instance, with blinking when an object is passed before the eye, and with biting and grasping, still more with the reflex turning of the head towards a bright object. Those reflexes which come more or less under voluntary control are always of this type.

It should also be noticed that a reflex response presupposes not only a definite stimulus, but also as a rule suitable general organic conditions. Thus an infant under precisely the same external circumstances will suck when hungry, but stops when satisfied.

Besides these definite reactions, and before many of them, the infant, as we saw, makes many random and incalculable movements of his limbs which are probably a response to internal physiological changes. The very indefiniteness of these random movements is important, for they bring the child accidentally into contact with things about him, and furnish him with new motor experiences which he will learn later to control.

§ 3. Instinctive Behaviour. Where exactly the line is

to be drawn between reflex movement and instinctive action at one end of the scale, and between instinctive and intelligent behaviour at the other, it is very hard to say. The popular use of the word 'instinct' implies an inherited disposition to behave in a particular way under particular circumstances without any knowledge of the end in view. Ordinarily this behaviour is advantageous to the individual and to the species to which he belongs. Moreover, every member of the species who has reached the same stage of growth behaves more or less in the same way when these special circumstances arise. Although it is true that many species are subject to fear at some sudden or novel percept, yet each species has its characteristic reaction under such circumstances. A frightened blackbird behaves differently from a frightened cat, and both again differently from a frightened child. So far there seems little to distinguish an instinct from a reflex ; and, like reflexes again, special instincts develop at different periods of immaturity. Thus fear and anger develop early in human beings, whilst the sexual instinct appears late.

The dividing line between an instinct and a reflex is difficult to draw, but the points of difference usually emphasized are the greater complexity of both stimulus and reaction in the case of instinct, and the greater possibility of modification of the reaction under the effects of experience. Perhaps, too, the presence of emotion or something like it may be regarded as a distinguishing mark of instinctive behaviour.

The stimulus of instinctive behaviour is always perception, however rudimentary, of an object of a definite kind; the reaction is usually a definite series of movements. Thus, when the young chicken hears a particular kind of cluck, it responds by running to the mother hen and nestling beneath her wings. We observers call the stimulus in this case 'the mother's danger call', but the chicken can have no idea of danger when it hurriedly makes for the maternal shelter. 'The young squirrel brought up in lonely captivity, when nuts are given him for the first time, opens and eats some and buries others with all the movements characteristic of his species; the kitten in the presence of a dog . . . assumes the characteristic feline attitudes.'[1] The nest-building of birds is a still more striking example of instinctive action. The process is one of great complexity, and as birds brought up in captivity often under favourable circumstances take to nest-building, even though they have never previously seen a nest in course of construction, we can be sure that the early movements in the long series can have a use only in relation to an end which is not foreseen.

At the same time it is important to remember that an instinctive reaction is more or less capable of modification. You cannot foretell the exact direction that a frightened chicken will take, or how far it will run, for it will behave a little differently every time. The reaction may be modified also by the general

[1] From McDougall's *Introduction to Social Psychology*, p. 25.

tendency of young creatures towards imitation. It is said that young birds such as linnets, placed in a nest of another kind, learn the song of their foster-parents, and even that kittens put in a cage with mice will not kill them, unless by accident in their play, till they have seen an old cat do so. Furthermore, many instincts, like many reflexes, do not come into play except under certain suitable organic conditions; a hen, for example, does not make a nest till she is broody, though she has the material always at hand.

Very often the instinctive behaviour even of the lower animals—for instance, the fluttering run of a chicken to its mother's call, or the singing of birds at pairing-time—suggests to us the presence of something like emotional excitement; and though, of course, we must not attribute to animals anything so developed as emotion in ourselves, yet it has been held that all genuine instincts include an emotional element, more or less rudimentary. However that may be, it is plain that instinctive behaviour is something more than merely mechanical movement. To be interested in an object sufficiently to react to it is no less instinctive than the consequent reaction itself. The chicken instinctively notices the hen's call, which would not interest another kind of animal; the squirrel is instinctively interested in nuts.

§ 4. Some of the chief Human Instincts. We see, then, that reflex movements and instinctive movements represent organic tendencies to action of a more or less specific kind. To know these tendencies in a given

case is to have at command the power to provoke activity. If we know the reflexes of the normal human body we can play upon them, test their presence or absence, or the individual's power to inhibit the natural response to the stimulus we apply. The same power attends a knowledge of the chief human instincts, though their treatment is a more important and a more delicate matter, since the instinctive reactions of the human being are particularly plastic and modifiable.

It still remains much in doubt what are the primary human instincts. Some writers enumerate over thirty; others admit less than a dozen. Nor is it, perhaps, very important for our purpose to determine the point, since by the time that children come under a teacher's observation most of those instinctive tendencies have become complicated in various ways, and no longer appear in their original form. The following list, therefore, includes only a few of the more important.

Among the earliest manifestations of instinctive behaviour come the movements prompted by *fear* and *anger*. These emotions are apparent even in infants, who are easily frightened by sudden noises, and angered by interruption of a meal or by any prolonged discomfort. In the infant they lead only to characteristic cries, but at a later stage they produce specific movements of flight and concealment, and of opposition or pugnacity.

Curiosity appears a little later. Like fear, it is

excited by strange and novel objects, but only when they are not so strange as to startle. It gives rise to movements which facilitate a further and, if possible, closer examination of the object—in an infant first to roving movements of the eyes, then to grasping movements, whilst at a later age the child will try to approach the object so as to see it better and handle it.

Affection, except in the forms of sexual and parental love, which do not appear till comparatively late in life, is by many writers apparently regarded as secondary and not an original instinct; but this view does not seem to be borne out by observation. It is true that when a very small child snuggles up to its nurse or mother, its movements may be only a search for comfort, and may involve as little affection as the cat's preference for a warm, soft lap; but genuine tender emotion and movements prompted by it do appear quite early. *Sexual love* and *parental affection* are emotions of a special character, and need be mentioned only as evidence that instincts develop gradually with organic growth.

Some writers speak of instinctive *Sociability* or a Gregarious Instinct. It is no doubt true that loneliness is distressing to human beings as well as to other animals that are called gregarious. But (whatever may be true of other animals) it is uncertain whether we should speak of a special gregarious instinct in man. The small child's distress when left alone seems to be of the nature of fear; and the adult, if not afraid of loneliness, dislikes it because it prevents

so many of his habitual inclinations from finding satisfaction.

In his dealings with others the child soon begins to exhibit two opposed tendencies, which seem to be clearly instinctive, *Self-display* or *Self-assertion* and *Self-withdrawal*. The one is marked by a feeling of elation or exultation, the other by a feeling of abashment. These tendencies are manifest before the child can with any accuracy be said to think about himself; but, of course, they are much modified and intensified by the growth of self-consciousness, and no less than fear and affection are keys of human nature on which the teacher has to play. His business, or an important part of his business, is to encourage, train, and satisfy curiosity, and this he may certainly do to some extent by inspiring fear and affection. But fear, if too intense, deadens all a child's powers, and affection some cannot give and some cannot win, so that a judicious treatment of these other tendencies has to be relied upon. Self-display is naturally at its strongest when a child is in the presence of those whom he considers his inferiors, before whom he can show off and swagger, and in this simple form it usually needs checking rather than encouraging; but when it appears, tinged perhaps with something of combativeness or pugnacity, in the more developed character of *emulation*, it can be so worked upon as to encourage the child to persevere in the presence of those whom he counts his betters. Similarly when abashment develops into *shame* at any failure or felt degradation of the self, it

can be trained so as to discourage from idleness or wrong-doing. To *imitation*, which is even more important, we shall have to return. It is by some denied the name of instinct, but some imitative movements come at any rate very near to being instinctive—the cry, for instance, that one infant takes up from another —and in animals such behaviour is common. (Of course the deliberate imitation of a model is far from being merely instinctive behaviour.) It should be noticed, however, that there is a certain indefiniteness in speaking about instinctive imitation, because probably no creature imitates everything that it is in its power to imitate, but only certain things, so that under the general name we are perhaps vaguely including a number of particular instinctive tendencies.

The same is true of two other so-called instincts, *Constructiveness* and *Acquisitiveness*. Making and collecting or hoarding in general are not instinctive, but only (if at all) making and hoarding certain kinds of things, as a bird makes a nest but nothing else. As a matter of fact, constructiveness seems in children to be one sort of play, and is largely deliberate imitation ; and collecting is often guided by a desire for self-display, so that what a child collects depends on what is considered precious by him and his fellows.

If we now cast our eyes back over these typical human instincts, we may note that they all reveal themselves in more or less appropriate action, so soon as there is sufficient control over movements and sufficient physical strength. But in young children

nothing is more remarkable than the futility of these early modes of instinctive expression. An angry child may scream, stamp his feet, and gesticulate wildly, but his behaviour is for the most part entirely ineffective. Control of movement is, in fact, an essential condition of effectiveness in the development of our instincts.

It must be remembered, of course, that the different instinctive tendencies are not all present with equal strength in every one, and, more than this, that there is a great number of tendencies and aptitudes which are not called instinctive because they are comparatively infrequent, but which seem nevertheless to be congenital. Musical interest and aptitude is an example. 'The difference between the musical faculty of a Mozart and that of a man who can hardly learn to tell one note from another is,' says Dr. Stout, 'a difference in inherited disposition.' The teacher must always be on the look-out for and learn to appreciate duly these individual differences; but more than a mere mention of them would be out of place in an elementary book such as this.

§ 5. How Control of Movement Develops. As we have seen, the infant makes movements before he can control them. These movements are mainly of the reflex or of the random type; for most of his instincts mature gradually, and there are but few characteristic instinctive reactions that he could execute unless he had already learned the movements which they involve. He is at first less able than most other young animals to make co-ordinated movements.

The chapter on infancy has already brought out the general principle governing the earliest stage in the growth of motor control. Certain movements made by accident result in a comfortable or gratifying experience. These tend to be repeated, and movements which are repeated become more easy to execute. The process is of course very gradual; even in ourselves we can notice that when we try to acquire a new dexterity, such as playing the piano, a single successfully produced 'scale' is far from sufficient to fix it finally amongst the many possible wrong series of movements. But each time that a successful movement is repeated, it acquires a little additional advantage; the pleasurable gratification that we feel each time helps to impress it and to depress the chances of its competitors, which tend gradually to drop out.

In more mature persons the acquirement of new dexterities, though it really exemplifies the same principles as in the infant, yet takes a somewhat different course: for we start with a rough idea of what we want to do, with a large number of motor co-ordinations already formed, and with a certain facility in varying them at will. Moreover, what is still more important, we can guide our movements, not only by percepts, but by images. Thus in learning to play the piano, though at first we had to look at the key-board each time that we wished to play the written note—first glancing at the score and then at the keys—we presently needed to look at the score only. The position of the key-board being fixed

relatively to us as we sat before it, we sooner or later got a picture of it in our minds which served as a guide to our fingers, or we got the 'feel' of the relative distances of the keys impressed on the memory, and now, perhaps, we can play in the dark. Similarly a skilled typist can type a dictated passage with his eyes shut.

When children come to school they have already acquired considerable control over their movements. Not only can they move their limbs or their fingers independently, they can also move them together for a common purpose. They can guide their hands by means of their eyes when necessary. They can walk and run, dance and skip, clap their hands, feed themselves, and so on. All these movements involve connexions in the child's nervous system—motor co-ordinations, as they are called—which were not there at birth, but have resulted from practice. Every teacher knows that children of four or five vary enormously in the number of such co-ordinations that they have formed. One child can dress himself, put on his coat and hat, take off his shoes, tie and untie the necessary knots, whilst another needs help at every turn. We help him in two ways, by guiding his hand or his fingers into the proper positions, and by making him watch other people doing the thing. But watching is useless unless there is some power of control already there: a baby of six months gets very little out of watching. The five-year-old can do some things with his hands, and if he watches another boy twisting himself into his coat, he may be stimulated to effectual imita-

tion by emulation and the thought that all big boys ought to be able to do such things. In any case, it will help him greatly to have his movements guided, because the positions demanded are new, and his existing motor co-ordinations tend to lead him astray. We put him through the movements, and lay the foundations of a new co-ordination which after some practice carries the movement-series through without a hitch and without a thought so soon as he holds the coat in his hands. The prouder the boy is when he achieves his first success the more rapidly will this come about.

Other dexterities learned in school, such as drawing, writing, precision of movement in drill, and clearness of utterance, whether in one's own or in a foreign language, are acquired in much the same way. The older the child, the less is he dependent upon the actual guidance of his movements, because his general motor control is more fully developed, and because he learns to watch other movements more minutely. In the case of speech-movements he is entirely dependent on imitation, for here he is deprived of the critical guidance of his eyes, and some teachers make up for this by providing their pupils with mirrors. Moreover, as the boy matures he gets clearer ideas of what it is he wants to do. He practises the movement when he is told that he has done it in the right way. Every one knows how keenly a cricketer practises a particular stroke, and how a golfer 'works' at his swing. Motor dexterity is acquired by practice, though individuals

vary enormously in their capacity for acquiring it. No amount of practice would make us all great draughtsmen or cricketers, expert violinists or skaters, or reliable surgeons or billiard players, though practice is essential to perfect performance, even when the native endowment is greatest.

§ 6. **Habit.** In earlier paragraphs of this chapter, we have drawn attention to instances of highly complex movements which we have learned, but which, in spite of their complexity, come to be efficiently performed without the intervention of consciousness. Who has not found himself undressed and in bed without the least recollection of having taken off a single garment? The intricate movements have followed each other in their customary order with the precision of a machine, and all the time we have been thinking over a difficulty which has nothing to do with our clothes. Automatic action of this kind depends on what is called psycho-physical retentiveness—that is, on the fact that every mental and nervous process produces a lasting effect on subsequent mental and nervous processes. An action which is frequently repeated approximates more and more in type to an automatic or reflex movement. It becomes increasingly easy, requires less and less attention and effort, follows regularly on its appropriate stimulus, and grows difficult to check. When thus perfected, the action is sometimes called secondarily automatic, to show its similarity to primarily automatic and reflex behaviour, which consists of habits acquired, not by the individual, but by the race. The move-

ments of our eyes as we survey a landscape or read a book or follow a moving object, admirably illustrate the point. The eyes move together as the occasion demands, without our attending to them in the least: so perfectly are the movements co-ordinated that it is difficult to realize that the co-ordination was not ready-made. But though doubtless the infant starts with a tendency to learn these co-ordinations, yet if we watch him closely we shall often notice that he is inclined to squint, and that his capacity for following an object in motion is distinctly limited.

The facility we have gained is obviously a great advantage to us. Since we need not attend to the movements of our eyes, we are left free to appreciate the meaning of what we see. If the pianist had always to be thinking of the movements of his fingers, his rendering would have as little interest as that of a beginner ; but now his fingers move correctly at the sight of the score, or at a mental image of the score, or, perhaps, of the sounds he desires to produce, and so he is left free, not only to produce a series of sounds, but to give an interpretation of the composer's meaning. Thus habit means not only facilitation of movement, but freedom to attend to other things. When we write, we think of our topic, not of our pens and fingers, and when we face the bowler we watch his action and do not think how to adjust the bat.

The routine activities of daily life are similarly accomplished with relatively little attention on our part. Experience has taught us what is expected of

us, what sort of behaviour brings least inconvenience to ourselves. In popular phrase, ' we slip into habits ' which render automatic our reactions to the customary stimuli of our environment. Social experience has resulted in the recognition of a certain minimum of decent general behaviour, which a child has to be taught. His tendency to imitate will fix many desirable habits, but special discipline is usually necessary. He must acquire certain habits of behaviour even though he cannot appreciate their relation to his own future. Regular insistence soon breaks down any incipient opposition, and renders automatic what was at first an irksome compliance. To allow exceptions on any ground is to prolong the struggle indefinitely. Discipline is necessary wherever intelligent motives are inadequate to persuade the individual willingly to persist in a certain behaviour until it becomes habitual. Even the adult has constantly to submit to discipline at the hands of his superiors and of public opinion and of the law ; often, too, feeling his own weakness, he submits to the discipline of his doctor for the good of his body, and to that of his church for the good of his soul.

In the instance of the pianist we pointed out how the freedom which habit gives is used to control the habit itself. This freedom to vary habitual movements is of the utmost importance. As we have seen, a habit is a disposition to behave in just the same way as formerly, and yet we can achieve nothing new except by the aid of motor habits. Unless habit itself were

capable of being adjusted to special circumstances, it would be the very prison-house of our activities. There is a stage when the pianist no longer has to think much of the movements of his fingers, but still has to attend closely to the score, and his rendering, though accurate and relatively facile, is hard and dull; each printed note evokes the right movement, and yet the whole effect is wooden. But the skilled player, having freedom to grasp the meaning of each phrase and of the whole piece, is not dominated by the now habitual connexion between sight (or image) and movement; *he dominates the habit*, and varies his pace and touch as the meaning requires. Precisely similar is the distinction between a good reader, who has facility enough to see ahead and grasp the spirit of that which he reads before he pronounces the words, and the schoolboy who may read with perfect accuracy and clearness, producing every syllable carefully as his teacher has taught him, but apparently feeling that this is the end of it all. This power of adjusting our habits reveals itself in many of our daily actions. We speak more distinctly to a deaf person, write an important business-letter more clearly than usual, walk to our place of work more rapidly if we have been delayed. Sometimes these variations of habit themselves become habitual. If you have first practised bicycling on a smooth, straight road, you must learn to balance yourself on rough ground or going round a corner, but in time this balancing will also become a habit not involving attention.

So far we have considered only motor habits: a word may be added, in anticipation of conclusions which we shall reach later, on habits of thought and of will. Established moral virtues, such as temperance, assiduity, punctuality, may be taken as instances of habits of will. It is evident that here the general tendency to behave in a certain way is habitual, but not necessarily the particular movements in which the tendency is realized: assiduity may be habitual, but yet be expressed in a variety of ways. Precisely the same kind of distinction exists between motor habits and habits of thought, which are really but a special kind of habits of will; thus a 'business-man' is apt to get into the habit of regarding everything from a commercial point of view, and it is the general point of view that becomes habitual, rather than any particular thoughts. One's occupation and circumstances are always apt to breed habits of thought which, if not counteracted, lead to narrow-mindedness and inability to see the other side of a question: and for this reason it is well to encourage varied interests in the young, even at the risk of some dispersion of energy.

Those ways of acting and thinking which when well marked are the distinguishing features of what we call character, rest upon the same principle of psychophysical retentiveness which is the foundation of motor habits. The rule of life in the midst of which we are brought up, the conversations we hear, all the subtle influence of 'atmosphere'—intellectual or

uncultivated, rough or gentle, critical or partisan—induce in us, largely through our tendency to imitate, a corresponding attitude of mind. The peculiar stamp which a good school sets upon its pupils has its psychological explanation in this principle of habit.

References for Reading

§ 2. On reflex movement, cp. Stout, *Manual*, Bk. I, ch. iii, § 2, and Bk. II, ch. ii.

§ 3. On instincts generally, cp. McDougall, *Introduction to Social Psychology*, ch. ii, and articles by various writers in the *British Journal of Psychology*, iii, pp. 209 ff.; also the article on Instinct in Baldwin's *Dictionary*, and James, *Principles*, ch. xxiv.

On the instinctive behaviour of the lower animals, cp. Groos, *The Play of Animals*; Lloyd Morgan, *Animal Behaviour* and *Habit and Instinct*; Romanes, *Mental Evolution in Animals*; Wundt, *Human and Animal Psychology*, lecture xxvii.

§ 4. On human instincts, cp. especially McDougall, op. cit., ch. iii; also Angell, *Psychology*, ch. xvi; Groos, *The Play of Man*; James, as above; and Preyer, *The Mind of the Child*, Part I.

§ 5. On growth of motor control, cp. Angell, *Psychology*, pp. 66–9, 334–7; Baldwin, *Mental Development*, ch. v.

§ 6. On habit, cp. Angell, op. cit., pp. 66 ff.; James, op. cit., ch. iv; Royce, *Outlines*, ch. viii; Stout, *Analytic Psychology*, i. 258 ff., *Manual*, pp. 108 ff.

CHAPTER VI

PURPOSE (CONTINUED)

(2) THE GROWTH OF INVENTION

§ 1. Imitation. We have now to consider the growth of the mind in the direction of conscious purpose or intelligent action, remembering always that though habit seems to be opposed to intelligent purpose, it is really necessary to its development: advance is possible only because the gains of the past are registered in habits.

We start with imitation because the child's first means of fitting himself into his social surroundings are imitative. Even we adults, when suddenly set in a novel social environment, are apt to feel awkward, and in our anxiety not to appear ridiculous, we carefully watch other people and do as we see them do. At all times the tendency to imitate is strong in us: fashions of dress and conventions of behaviour are notoriously hard to resist, and in a crowd men will follow examples of which in sober and solitary moments they would be ashamed. In the child imitation is still more dominant, though of course it is not at first deliberate. By imitating, the child acquires the more conspicuous habits of his social environment and becomes an inheritor of man's kingdom. To make himself master of his inheritance he must indeed do more than copy, but copying puts him quickly in possession of much

skill which his forbears have needed long ages to acquire.

In the child, imitation is the first mode of learning the habits of the race, but in most and perhaps all of the lower animals it is also the last. For their interests remain in merely perceptual experience and actual movement; they cannot reach the level of independent thought, and cannot, like the child, learn to learn by language, so that even in the rare instances where an animal such as a monkey copies intelligent action, it cares only for the action, and never appreciates the intelligence.

Strictly speaking, we ought to confine the word 'imitation' to copying movements, as when a child new to drill copies the movements of the child next before him in the rank, and to copying the result of movements, as when a child takes to slamming the door when he leaves the room because his father is apt to do so. Here the interest lies in making a noise, not in exactly copying a series of movements, and in fact the movements made may vary considerably from those of the model.

When we thus speak of imitating or copying, we naturally think first of intentional imitation. The student must not, however, suppose that all imitation is deliberate. Indeed, we shall find, by comparing various types of imitative action, that they illustrate very plainly the stages in the growth of purpose from instinct to volition.

A small infant hears another crying, and begins to

cry too. Here we have clearly not to do with intentional copying, any more than in the common instances of the contagious cough that runs round a congregation in church, or the fit of yawning that one bored or sleepy person catches from another. We may be surprised to find ourselves thus coughing or yawning, so far from intentional is our behaviour, though at the same time we may with difficulty be able to stop. The amount of attention to the model involved is very slight, so slight that sometimes the model can barely be said to be perceived, and though we may call this kind of imitation instinctive, it really lies on the border between instinctive and reflex behaviour.

Next, suppose that you intently watch another person batting or playing billiards, and follow his every movement: you will probably find that, as you watch, you keep making similar, though incomplete, movements yourself. This is particularly noticeable if one looks on at rhythmical motion, such as dancing. In these instances you are keenly interested in, and you attend to and fully perceive, the model; but you are not at all interested in making these little imitative twitches, which occur without any volition on your part, though perhaps without your knowing they help you to apprehend more clearly the other person's movements. In a similar way both children and adults pick up a number of tricks of gesture, pronunciation, and the like, not because copying them is interesting, but because they are interesting as observed in others, or are made by interesting people. We may conclude,

then, that perception of interesting movements in others tends to evoke similar movements in ourselves, which may, however, remain incomplete and unnoticed.

But sometimes interest lies not only in the observed object, but also in the process of imitating it. A small child watches you clap your hands and then claps his, grins if you grin, and wags his head when you wag yours. Here, as before, a definite perception of interesting movements evokes imitative movements, but the process of imitating is now itself interesting and gives satisfaction in proportion to its success. This is still impulsive, not deliberate, action; that is, the child does not think, 'Let me copy this admirable object;' perception leads directly to action; but this action, as well as aiding perception, is pleasant in itself. This impulsive imitation occurs quite early—infants of three or four months will often with evident effort, but equally evident pleasure, try to copy if you put out your tongue or purse up your lips—and it is an important means of acquiring new powers. It is thus that the child learns by imitating. He is constantly trying—if we may speak of trying where there is no express intention—to imitate movements of which he is not yet fully capable. Of course he must already be able to execute movements which, though not identical with those that he attempts to copy, are of the same kind as they: he must be getting some control over his lips before he purses them in mimicry, and over his hands before he tries to clap them as you do.

But his first attempts at mimicry fall far short of the model. In early months this may not trouble him (and indeed the infant's first imperfect attempts at imitation are usually very transitory and are apt not to be repeated for several weeks); but after a time he notices the inadequacy of most of his efforts, and when by some accident one among them reproduces the model more closely than usual, he feels special satisfaction and elation, and, as we have seen, those movements which give satisfaction gradually acquire predominance.

It is evident that this impulsive imitation will easily pass into intentional imitation as sentiments and thought develop. Most children are worshipping animals, and their admiration for their parents or for some bigger child who is their hero issues in a conscious desire to imitate. They imitate now because they want to be like their model.

But there is a second kind of intentional imitation to be considered, when the end to be achieved lies altogether beyond the act of imitation itself. Thus a boy may imitate a clear penman, not because he really admires either him or his handwriting, but because he wants a post as a clerk, for which calligraphy is a necessary qualification; or in order to pass an examination he may carefully copy his master's pronunciation of German though he detests both the man and the language. In such instances as these the end is said to be remote: the process of imitation is not interesting in itself, but acquires a secondary sort of

interest as being a necessary means to the desired end.

As imitation grows more intentional and less impulsive, it necessarily becomes more specialized in its direction. The small child imitates everybody and everything: his older brother copies those whom he admires and wishes to resemble, as we have just seen, or those whose skill he for any reason wishes to master. The tendency to imitate becomes complicated with other tendencies, and notably with that to self-assertion, and so in growing more specific it gathers rather than loses force. The small child is easily diverted from copying this to copying that: not so the boy who is anxious to keep pace with his fellows or even to overtake his seniors. Do they smoke, he must smoke too. He tries, and the consequences are violently disagreeable; yet he persists, because the desire to imitate is now supported by the sentiment of pride and the fear of patent inferiority.

A few lines ought perhaps to be added here about what is often called 'dramatic imitation' in children. As we all know, many if not most children, especially from their third year to their seventh, are fond of acting parts: they are for ever playing at being a shopkeeper, or a parson, or a horse, or a train, or what not. It is a common mistake to rank this kind of play with pure imitation. But when a small girl puts a few trifles on a stool, squats behind it, and announces that she is keeping shop, her behaviour is evidently much more than merely imitative. She knows quite well that the

stool is much lower than a real counter, that her store of goods is ludicrously scanty, and that she does not really look like a shopwoman, and every other circumstance is altered to correspond: she does not expect you to come to her shop in outdoor clothes, or to pay in real money, or to take her trifles away for good. The whole business is make-believe, an imaginary construction, the germ of artistic creation; and it is as foolish to call it purely imitative as to call the fine arts so. Unfortunately most people, while they think the behaviour of children in isolated instances much cleverer than it really is, greatly under-estimate their general intelligence and common sense.

The old adage that Example is better than Precept is doubly true. In teaching any dexterity, such as penmanship, we appeal mainly to intentional imitation: we show the child how the thing is done and bid him do the like. Evidently he is more likely to succeed thus than if he has to construct an image of the action from what is probably a very inadequate description of it, just as we ourselves learn more from the coaching of a professional than from perusing any number of manuals on golf or cricket. But the proverb refers chiefly to the tendency of example to evoke impulsive imitation or that simpler intentional type that issues from admiration. It is of no use trying to inculcate pure utterance if your own is the accent of Cockaigne, or to adjure your pupils to be clean if your own hands are unwashed. They will imitate your behaviour without knowing it and without your knowing it, or maybe

they will imitate it from sheer adoration of you. Better almost, if your own habits are nasty, that they should detest you, for then they may deliberately follow your precepts in order to avoid your example.

§ 2. Impulsive Behaviour. We have called imitation impulsive when the perception of immediately interesting movements leads directly and without reflection to the performance of like movements; and we have called it volitional or in the strict sense intentional when the performance of like movements is preceded by the thought of performing them and by the adoption in thought of the performance of them as an act which I mean to carry out. Noting, then, that volitional action always involves this adoption by me of an end as mine, as one which I mean to realize, let us for the moment consider the character of impulsive behaviour.

In impulsive imitation a *movement* is evoked by the *perception* of a *like movement*. Can we say that this is so in all impulsive behaviour? Evidently not. For in the first place the perception which leads to movement need not be of a similar movement or even of movement at all. You clap your hands and a rabbit scampers away, perceiving not a movement but a noise which frightens it; you whistle over a gate and the cows gather round you, moved by curiosity, but not imitating you. So, too, our habitual actions are, as we saw, often executed impulsively, but they are not as a rule imitative—for example, when you avoid the lamp-posts and the passers-by as you walk along the street wrapt in thought. We see, then, that

movements may be evoked impulsively by any kind of percept with which they are associated.

Secondly, impulsive behaviour is not always evoked by perception merely. It may be guided by a definite conception and image of what we are going to do, and yet be genuinely impulsive and not volitional. This is clearly brought out by many abnormal cases that have been recorded, e.g. that of a nurse, 'a gentle, peaceable creature as a rule, who during her mistress's absence one day felt an irresistible impulse to cut the throat of the little child she was nursing, with a knife that she saw on the table, and this though she was devoted to the child. She ran into the kitchen with the knife, threw it away, and begged the cook to keep near her. . . . The cook refused . . . the irresistible inclination to murder the child came on again, and she would probably have done it had not her mistress returned in the nick of time. . . . Later on she admitted what awful torture these impulses had been to her.'[1] Plainly they were accompanied by an 'I must' consciousness, not by an 'I will'. Similar instances are moderately common in normal life. Many people have, for instance, probably felt, and with difficulty restrained, a vehement impulse to shout or do some other foolish thing on solemn occasions. These examples show that not only percepts but the thought of an action, especially if accompanied by a clear image of it, may lead to the impulsive execution of it.

Lastly, the end to which impulse makes need not be

[1] Störring, *Mental Pathology*, p. 286.

movement. You show a bright colour to a small child, or tell a story to an older one, and he at once attends, as you yourself do many times a day to various objects, unreflectively and without volition. No doubt attending, as we shall see in § 5, involves certain movements, but what gives satisfaction is not these movements, but the clearer perception of the object, or the clearer understanding of it.

What, then, is the common character of all impulsive behaviour? Negatively it is marked by absence of volition, and the corresponding positive character is its directness or immediacy. A given percept (or, more rarely, a thought or image) leads directly to action. It follows from this that impulsive behaviour is more abrupt and disconnected than rational conduct, since it is dependent on what one happens to perceive, or on the thoughts or images that happen to occur to one. The nurse's murderous impulse was evidently quite isolated, and bore no relation to her usual sentiments and conduct. Similarly, you may be reading or writing, and a fly settles on your nose or a wasp buzzes round your head; without thinking what you are doing, impelled by the chance occurrence of the moment, you brush the insect away.

These are indeed rather extreme instances. The behaviour of the lower animals, if or in so far as they do not think, must be impulsive, determined from moment to moment by their appetites and percepts—even the dog takes no thought for the morrow and does not reflect on yesterday; yet if you watch

particular trains of action—those of the dog as he goes out hunting, or even those of the snail as it creeps out in the evening and settles on and devours the foliage—you will say that there is some connexion between their successive movements. In the instances given the trains of actions lead up to the satisfaction of hunger. They seem to depend on a rudimentary sort of selection: many things which might have been perceived are not actually perceived, and only those objects attract attention and so determine movement which bear on the dominant interest of the moment. But though there is connexion here, it is due solely to contraction of the field of interest, and as soon as the impulse has reached its end it is over and done with, since it is not a step in the fulfilment of any ulterior purpose.

The isolated character of impulses is clearly seen when they conflict. Watch a hen about to enter through a small hole into a dark shed where her nest lies: she puts her head in, then draws it out again with timorous rapidity; she may do this several times, then she gets half through and halts, finally bolts in. Two impulses sway her alternately till one wins. But if you hesitate whether to swim over a river or not, you are not merely swayed, you reflect on the alternatives, reckon the risk, consider whether it is worth taking, and so on, until you decide. The hen does not decide, but is impelled.

In man, who is capable of volition, impulses may be connected in another way, namely, as servants of intention. One would not call the behaviour of beasts

either voluntary or involuntary, because they are not capable of volition at all, but we may apply these terms to the impulsive action of rational beings. The nurse's murderous impulse was involuntary, because it ran contrary to her volition. On the other hand, you would not say that you involuntarily avoid passers-by on the road. That is, we call our impulsive acts voluntary when we would accept them if challenged, even though we have not expressly determined to do them. Now a great part of our behaviour is of this routine and habitual kind. We may, for instance, dress, wash, and feed in the morning with scarcely any express volition, but yet we do so in furtherance of our general plan of living, and therefore voluntarily, or even in a secondary sense intentionally.

§ 3. Volition and Desire. The behaviour of children is, of course, at first purely impulsive, and even when their powers of thought have developed considerably it still remains in great part capricious, directed now this way and now that by chance percepts or ideas. The child rushes headlong into action: to think of doing something and to do it are all one for him. Part of his education consists in the interposition of a temporary barrier between percept or thought and action—a barrier of reflection, based on sound sentiment and habits. But to check action thus needs caution. For what is desirable is to supplant the child's promptness in all action by promptness in right action, not by reflection prolonged into indecision. It follows that inculcation of right principles should never outrun

practical training in right habits. The aim is organized behaviour issuing from good habits of will. Such behaviour is indeed expressive of good principles of action, but these principles themselves should govern conduct so regularly that they rarely come into reflective consciousness. As we saw in the last paragraph, much of our organized voluntary behaviour is habitual. It is in the end governed by an 'I will': it is a step towards an end which we have chosen or at any rate accepted: but it is not determined by express volition at every moment of its course.

Even in the behaviour of normal adults very different degrees of organization are observable. This man is so bent on the realization of some purpose—the passing of an examination, money-making, or marrying the woman he loves—that he lives for nothing else: his every act is a means to the fulfilment of that purpose, or if any act, such as taking food, does not seem to him to bear upon it, he is apt to neglect it. Another is more flighty, his behaviour is more capricious, his impulses are less subordinate to volition. A third is capable of steady movement to an end, but despises the narrowness of such an end as money-making, and holds that growth of character, though it must not be vacillating, must be more comprehensive, and lies in the harmonious development of many sides of one's nature. But wherever there is volition, there is some organization, some concentration of powers, and some subordination of means to ends.

Let us now examine more carefully the act of volition

itself. It is, as we have seen, that act of adopting an end as ours which we express in the words 'I will'. We may arrive at it easily or only after a struggle. If you are doing nothing of interest, and a friend asks you to go for a walk with him, you may say 'I will' at once; but if you are lazy or busy you may hesitate for some time. Yet the decision, the act of willing, when you arrive at it, is always the same: it is unlike any other experience, and we cannot in reflection analyse it into elements as we can analyse, for instance, an emotion like reproach or wounded vanity. Every one knows it, but no one can describe it. We can only describe its constant accompaniments, and so get some insight into its conditions and consequences.

We may note in the first place that we only will what we believe we can do. As Dr. Stout has pointed out, where we say 'I will' we also believe and mean 'I shall'. We may indeed desire what we believe to be impossible, but we cannot will it: our desire remains mere wish. Any craving or other conation is apt to turn into desire when obstructed; it is so with the hungry man who has no food, or the bored listener who cannot escape from the audience. They desire, but they do not will. When a craving like that of hunger is obstructed and cannot proceed directly to its satisfaction we become vividly aware of the end which alone will satisfy it, and we also experience the characteristic unpleasant unrestful feeling which accompanies obstructed desire. But will does not follow until we think of some possible way of procuring food,

and then there comes also a feeling as characteristic of volition as the previous feeling was characteristic of mere desire.

Both desire and volition involve anticipation in thought of one's future behaviour. But so may expectation also. 'What will be the result of your match?' 'Oh, I expect I shall win, but I don't care whether I do or not;' here is expectation without (as yet) desire or volition—forethought of a likely occurrence, but no conation towards it as your end nor the peculiar feeling tone which helps to constitute desire.

You may desire or determine to go and play a game of lawn-tennis; you may equally well desire or determine to reflect on the mistakes that you made in your last game. In the former case the end which you hold before yourself in thought seems to be mainly a bodily activity, in the latter case mainly a mental activity; in the one you attend to the thought of movement, in the other to the thought of reflecting. But the difference is not so great as it appears to be. You do not desire merely to make the movements of a tennis-player, but you desire the conscious experience of playing, and this desire of an experience governs your movements from the first moment when you pick up your racquet and make for the ground; and when you desire to recall or reflect, again the desire of an experience evokes movements—those movements of drawn brow, clenched hands, fixed gaze, and the like which are commonly involved in attentive recall or reflection. The difference is that in

the latter case you do not will these movements directly: they follow without your thinking about them when you start to reflect. We have here another instance of the principle that movements may by a process of association come to be evoked by the thought, not of them, but of something else connected with them in past experience. In the child the movements of attending follow at first on any loud noise or other striking percept without conscious intention on his part. By and by he is told how to attend intentionally, told to sit up straight, to hold his head up, to look this way, and so on; and later the mere thought of attending suffices to evoke the appropriate motor response without his thinking about it. (Cp. what was said of the pianist on p. 84.)

When desire is unopposed it passes into action so easily that volition is barely noticeable. When it is opposed by the belief that what is desired is impracticable, it either disappears, or, if it remains, causes, as was said above, a state of unpleasant and ineffective unrest. A special instance of this kind of unrest is remorse, which is occasioned by the wish that one had acted rightly in the past.[1] But desire may be opposed by desire. You want to work for a certain examination, but your health is not good, and you do not want to overstrain yourself. You want to learn Italian, but

[1] It is dangerous to indulge in remorse, just because it is so ineffective. The wise parent or teacher feels this, and after persuading the child to feel sorry for his misdeed, does not leave him at that, but turns his thoughts to the future and tells him 'not to do it again'.

you want also to maintain your proficiency in other subjects, and are not sure whether you can spare the time. You want to buy clothes cheaply, but you know that these are made by sweated labour which you want to discourage. You want to slander an enemy, but you do not want to do a mean thing. In all these instances a desire is checked in its passage to fulfilment because it runs contrary to an organized system of dispositions. We may call them cognitive or affective or conative, as we choose: they are all three at once; the thought that health is valuable or that one ought to do what is right, the sentiment of self-respect, the desire to do what is prudent or what is right, are examples. It is important to bear this point in mind because in cases of moral struggle we are apt to speak as if a desire—to slander, say, or steal, or play the glutton—were opposed by something not desire, by the mere thought of moral principles, whereas the conation to do right and avoid wrong is no less genuine desire.

It may happen that instead of a relatively casual desire being checked by an organized system of dispositions which then become active, the contrary occurs: thus you may be occupied in actively trying to put down sweating, and then suddenly be tempted to buy a cheap garment which you happen to see in a shop-window.

In any case, when desire is checked by incompatible desire, a period of deliberation, more or less developed, ensues. When deliberation is fully developed, it

consists in estimating in thought the realizations of the rival desires, the means to their attainment, and the consequences of their fulfilment, as rival possibilities of *oneself*, and volition takes the form of a decision between them which is at the same time a resolution to carry out the course decided on. Thus you may say to yourself, 'If I learn Italian I shall be able to read many famous books which are said to lose much by translation, but on the other hand I must spend time and money on it which I can ill afford, and must neglect other occupations;' or, 'If I spread this report about So-and-so, I shall rid myself of his presence, but I recognize that it is a base thing to do, which done I shall lose my self-respect and shall be and know myself a blackguard.' In this instance, we may suppose, your knowledge that the proposed action is base, your aversion from acting basely, your sentiment of self-respect, are victorious; you reject a future self, which you know would be a poorer self, and decide to hold your tongue. But in the former instance it may be that neither alternative seems distinctly preferable, and you either decide for or against Italian, not on reasonable grounds at all, but from mere weariness of indecision, or drop the plan of learning Italian, not because you decide to do so, but because you cannot decide to begin.

But the collision of opposing desires does not always lead to such complete deliberation. Sometimes one is rejected as soon as its incompatibility with the other is recognized: thus you may say to yourself almost at once that it would be monstrous for *you* to buy clothes

made by sweated labour, that you could not possibly do anything so mean as slander, or the like. Here your pride, your conception of your true self, your desire to realize it only, choke the casual desire as soon as it is born. But sometimes also a casual desire, especially if it rises out of the appetites of hunger, thirst, and so on, is so strong that it receives only a momentary check from more organized and rationalized dispositions, and passes into fulfilment before they can be effectively aroused. This is not involuntary action: it is not done against an 'I will', but often with a very defiant 'I will'. A man may truly say afterwards that when he committed a passionate act he had lost his self-control and was not fully himself, because in willing the deed only a mean and narrow conception of his self was operative; but he did will it, though, as we say, his will was blinded by passion.

Though we cannot will what we believe we cannot do, we can genuinely will what we wrongly believe we can do. There is no railway service from here to London on Sunday morning, but, if I do not know this, I may very well determine to go to London by train on Sunday morning next. Similarly if there is a service of trains, but I am taken ill in the interval. Willing an action does not, therefore, necessarily lead to performing it.

There is an error concerning the will which the student must be careful to avoid. He must not, namely, suppose that voluntary behaviour—the conduct of a rational being—is altogether disconnected

from impulsive behaviour. On the contrary, as we may observe in any child, it grows out of impulsive behaviour, though, as is the case with all mental development, the more perfect stage of growth presents features which we could never have foretold from an examination of the less perfect; and it does not mean the annihilation of impulses, but their organization and consequent modification.

This organization is a very gradual process. It is, of course, never complete in any one, but its growth may be exemplified by a contrast between the method of work of a typical boy of thirteen or fourteen and a typical sixth-form boy. The school year is wearing through, and they both know that at the end of it they have to stand some test. They would both with equal honesty say that they wish to do themselves credit at it. But this purpose does not dominate the younger boy's behaviour as it does the elder's; the former works for a while, but is soon distracted; he acknowledges that he ought to revise, but this knowledge does not consistently determine his conduct.

If we go back to childhood, we see how great a part the society about him plays in encouraging the child's growth from mere impulse to reasonable conduct. It is largely owing to emphasis laid upon it by others that he learns to appreciate the connexion between his actions and their consequences. 'See, So-and-so, what you have done,' they say to him. So he comes, not merely to act, but to regard his acts as his, because they are so emphatically attributed to him. His

behaviour has no moral character till he discovers that other people also have wants with which his wants may conflict. His original impulsive behaviour is not either selfish or unselfish; it makes for its object without reflection. But after a time he finds himself prevented from taking that toy, for example, because it belongs to his brother, who also wants it, and by repeated experiences of this kind he learns that other folk have desires and needs which require consideration. Not till he has made these discoveries does his behaviour begin to be conduct, in which his impulses no longer move straight to fruition, but are recognized by him as what he wants to do.

Though in a sense impulses persist in voluntary conduct, yet their nature is modified in many ways, of which we can note only one or two here. The growth of reflection means that we become aware of the ends of our own impulses, and so are able to connect them with one another in a more or less coherent scheme: they are no longer isolated. Watch the life of any decent industrious head of a household: it is so ordered as to satisfy a large number of appetites and instinctive tendencies. For instance, he not only earns food for himself, but gratifies his affection for his family by providing for them. But in thus organizing his impulses he subordinates some to others: thus he comes to regard food more as a means to good life than as an end for which to live. Moreover, organization involves modification of impulses as regards both their occasions and the reactions to which they lead:

he learns, for example, to fear bad drains more than thunder-claps, and if he is injured, to take legal proceedings and not strike his enemy in the street. In all these respects he realizes himself according to principles of action—principles more or less explicit, some simply accepted by him from the society in which he lives, others also recognized by him as reasonable and right.

But in addition to this he acquires new interests. As we have seen, all voluntary behaviour includes adaptation of means to ends, and obviously all action entails many consequences besides those which constitute its end. Here are opportunities for development on fresh lines. Means which were at first uninteresting and consequences which were, perhaps, even unforeseen come to be interesting in themselves and to be sought for their own sake. Thus our decent citizen, let us suppose, is engaged in teaching, and at first he took to this occupation as a means of earning a living, but now he is interested in teaching itself and tries to excel in it; and again he has an official house to which a garden is attached, and this chance consequence of his industry opens out a new set of interests and possibilities for him.

§ 4. Attention. It has already been pointed out that, though in psychology we find it convenient to examine mental behaviour on its different sides, so as to bring out more clearly its cognitive, conative, and affective aspects, yet we are really examining what is in fact one and the same process all the time. The real unity of the three aspects is nowhere more

evident than when we consider the act of attending. Suppose that you are at a public meeting: you see the gestures of the speaker who is addressing the audience, you hear his words, you understand and reflect on his meaning, and so far your behaviour is plainly cognitive. On the affective side, to see, hear, and understand is what interests you at the moment; if you feel bored, you soon begin to look away and think of other things. But, if you are not bored, or if you overcome your boredom, you do not merely see, but look; not merely hear, but listen; and you understand because you try to do so. You actively seek impressions and knowledge; they do not simply come to you, but you prepare to acquire them. We might describe the act of attending as preparing to cognize. So when the teacher says to the child, 'Attend to what I say,' he means, 'Make ready to hear and understand what I say from moment to moment until I stop.' This preparing to perceive or understand is plainly conative activity.

In the examples taken, attending is a voluntary act. If the speech to which you are listening is badly delivered, or the subject is indifferent to you, it may be that you can keep your attention fixed upon it only by express volition; but even if it is attractive in itself, you would scarcely be sitting there in the audience unless you had decided to do so, and your attending, though it does not involve any struggle, is yet part of a voluntary process.

We often attend, however, not because of any

determination to do so, but because, as we ordinarily say, some object 'attracts our attention' or 'catches our notice'. The child who is reprimanded for inattention is not probably attending to nothing at all, for if a state of absolute inattention ever occurs, it does so only when we are on the point of falling asleep or of swooning: he is attending to something other than his lesson—to something which is interesting to him in itself, and to which he spontaneously or impulsively directs his activity. It may be something he sees out of the window, or some sound he hears, that arouses his curiosity, or it may be some thought, say of to-morrow's match, which suddenly occurs to him and which it interests him to develop. His lesson does not arouse appropriate dispositions in the same direct way: he has to be induced by command or other means to attend to it.

Thus we find repeated in attention the distinction of voluntary and impulsive behaviour which we have been considering throughout this chapter. We are naturally led to ask whether we are really considering anything new under the head of attention. Is attention something different from conation, or is it a particular kind of conation, or is it just conation itself regarded from a special standpoint and called by a new name? The last seems to be the true view. When you are walking down a rough mountain path, you 'look where you are going'—that is, you keep ready to perceive each obstacle as you come to it, so that you may plant your feet aright. If you are in a boat

fishing for trout, you watch the fly that you have cast upon the water, so that you may see at once if a fish rises to it and thus strike promptly. In both instances your desire—your total conation—is practical: you want to get safely to the bottom of the hill, or you want to catch a fish. But to achieve these ends your movements must be prompt and appropriate, and they can be prompt and appropriate only if you attend carefully from moment to moment. This attending is your desire gradually working itself out, in so far as working itself out means making ready to perceive the stones or the fish: it is your desire aiming from moment to moment at more adequate cognition such as is needed if your movements are to be guided aright. In these instances more adequate cognition—perception of stones or fish—is merely means to the achievement of the end of your desire, which is satisfied only by getting to the bottom of the hill or catching the fish. But often the end of our impulses or desires is just more adequate cognition itself, and not anything beyond that. When the infant's eyes follow a burning match waved to and fro, it is the clearer perception got thereby that gives him satisfaction. When a sound outside attracts the schoolboy's attention, he wants to know who or what is there. When you read the Prime Minister's last speech attentively, you do so because you want to know what he said. In such instances as these a conation aims at and finds its final satisfaction in more adequate cognition, and we see at once that attention is not something beyond the

conation, but is simply the conation itself regarded as a making ready to perceive or understand an object better. So when we speak of impulsive or voluntary attention, we mean the same impulsive or voluntary behaviour of which we have been speaking all the time ; only, we now regard it from a special point of view.

If we look at the matter in this way, it becomes evident that the child's attention must at first move with his natural cravings and instinctive activities. When hungry he is interested in anything that he can put into his mouth : not so when he is replete. The noise that frightens him, the mocking face that angers him, in so doing attract his attention. Still more evidently his curiosity cannot be aroused without his attention, and what objects stimulate attentive curiosity depends at first on native disposition. This is the point that most interests us here, since instruction must always play upon curiosity. The keenest curiosity is aroused by sudden change in what is familiar—change which demands partially new adjustments. In ourselves it may be aroused equally well by change in what is, or by change in what we expect to find or would have expected to find if we had thought about it—an object passing across the field of vision, a sudden light or noise or odour, or equally well the appearance of your untidiest acquaintance now sprucely dressed, of disarray where you expected order, or of a crowd where you are used to solitude. But in the very young child, who has not yet arrived at the stage of expecting anything, curiosity can, of

course, be stimulated only by change in what he happens to be perceiving at the moment.

Attention in a child is always very short-lived. It may be short-lived in adults too, for since, it is preparing to cognize, it attains its end as soon as cognition results, and sometimes we are satisfied by momentary identification of an object, or even by mere awareness that the object is not the one that we are looking for, whereupon our attention shifts to something else. Thus if you hear a clatter behind you on the pavement, it may be enough for you to look round and see that it was only a dropped walking-stick, and if you are hunting for a book on your shelves you attend to most of the volumes only just sufficiently to make sure that they are not what you seek. But more often sufficient cognition of an object to satisfy us is attained only by a gradual process. When you listen to an orchestral symphony, or when you study, let us say, the tactics of a great battle, your attention shifts, no doubt, from moment to moment, but it shifts to new aspects of the same object, not to an entirely different object. It appears from moment to moment as preparation for the next step in a continuous and systematic cognitive development. But in the small child this prolonged concentration upon a single object is impossible : nothing has yet enough meaning for him to excite his curiosity for long. He may occupy himself, perhaps, for a fair stretch of time with toys that he can move about and manipulate, but then his attention is in the service of practical activities ; he is interested

in what he can do in the way of actual movement. But he has soon looked at a thing or listened to a thing long enough, if looking and listening do not lead to doing something with it, because he has so little previous experience to which he can relate what he sees and hears. If you, knowing nothing about the subject, travelled in a railway-carriage with two men who were discussing a difficult problem in mathematical physics, your curiosity would soon be satisfied, and you would turn to your newspaper, because 'you couldn't make out what they meant'. Just so the child has very soon 'made out' all that he can of what he sees or hears, and something else catches his attention in its turn.[1]

This holds good, though not to the same extent, even of the child in the first years of his schooling. His impulses are still mainly towards movement and doing, not towards thinking and knowing. He will watch and listen longer now than he did a year or two ago, but chiefly because his practical interests are wider, and more of the objects about him now give him openings for action. He is still almost as impatient of mere thinking as he was formerly of mere perceiving.

Sensible instruction recognizes these facts. It is absurd to expect a child to remain long sitting or standing quietly in one position, and unwise to force him to do so. It is no less absurd to expect him to listen contentedly for any considerable length of time to merely verbal teaching on subjects which seem to

[1] Cp. R. L. Stevenson's autobiographical essay, *A Penny Plain, and Twopence Coloured.*

him to have no bearing on his actions, especially if it is not illustrated by an appeal to his senses. The teacher's difficulty is always to realize how much less his words mean to the child than to him. Of course, the child has probably grown out of the purely instinctive stage of behaviour before the teacher begins to deal with him, but as a rule (for there are exceptions) his interests are still in the main practical. He cannot spontaneously attend at all to what has no meaning for him, and he will attend longest and most keenly to whatever he can connect with his own action. You can teach a boy of six the Greek alphabet, but not by way of immediate spontaneous interest. For a few moments his curiosity may be excited by these strange letters, but it soon passes, for he cannot foresee what the knowledge of them may lead him to: you have to make the appeal to voluntary attention.

This appeal has to be made some time. The child must learn things that seem dull to him at first, and it does him good to have to learn them. You may persuade him to attend to them by various means—in earliest years, perhaps, by appealing to affection for you, later by persuading him of his manliness and encouraging his growing conception of duty—and at all times you can compel him to attend for fear of punishment. The last method may be an inevitable step in the instruction of every child, but it is only a step, and useless by itself. You can make a boy learn anything within the limits of his capacity, if he is sufficiently afraid of you; but you cannot in this way make him

care about what he learns. It remains external to him. He gets up so many pages, and answers your questions correctly; and then he goes out and forgets it all as quickly as possible. You may have a whole class of boys in this condition—a submissive, orderly class, regularly learning its task, and as regularly casting it out of mind as soon as the hour is over. They lead two lives, and all richness of interests belongs to the life out of school.

The appeal to duty and self-respect is, of course, preferable to the appeal to fear, but it too, by itself, is insufficient. No child makes much progress with his studies if he pursues them only because he knows that he must or even that he ought. That may have to be the beginning, but if his work is to compete with objects that are immediately attractive to him, it also must become attractive to him in itself. Attention with effort is never proof for long against distracting influences, and moreover it is far more exhausting than spontaneous attention. To take a familiar instance, the old-fashioned method of teaching boys Latin was to give them a grammar, and make them begin by learning the meaning of a few words and the traditional examples of a great number of rules. They were, perhaps, set some simple but exceedingly dull exercises to translate into Latin, and they were given an author to construe, with very little explanation as to who he was or when he lived or why he wrote. Now, whatever method of teaching Latin may be adopted, the rules of grammar must be inculcated

somehow, and boys are not likely to find them immediately interesting: some persuasion and probably some force must be used to induce boys to keep to their work. But the fault of the old haphazard method was that it did not try to set up new interests. A few boys who were naturally quick at languages might become interested in Latin literature for its own sake, and no doubt they had received a solid grounding which was of great assistance to them afterwards; but to the majority Latin remained as it began, a tiresome thing, to be learned of necessity, and to be forgotten on the first convenient opportunity.

Thus the teacher must regard the appeal to voluntary attention as only a step towards the formation of new interests. He is unsuccessful so long as his pupils learn only because he makes them learn, though no doubt his failure may not become apparent at once, for he may quite possibly succeed in getting them through examinations and the like with tolerable credit. He cannot hope that they will always be directly interested at first in what he has to teach them, but he should expect that after a time they will become directly interested in it. This, however, will not happen if he merely drives new information into them: as we have seen, curiosity is stirred, not by the absolutely novel, but by modification of what is already familiar. He must always connect new information, therefore, with what they knew before, so that they can assimilate it and not merely repeat it by rote. For he wants them to understand, not simply to remember:

and intelligence grows, like an organism, only by what it can assimilate.

The end of attention being more adequate cognition, this is its result so far as it is successful. But attention is always a selective process: if you attend to one thing carefully, so that you perceive or understand it better, you must for the time neglect other things. If you listen intently to the music, you cannot at the same time watch the faces of the audience; if you are absorbed in a novel, the clock may strike without your noticing it. The more you are concentrated upon one object, the less you are aware of others. A comparison is often drawn with the field of vision. Just as you see most clearly that object upon which your sight is directed, so in all attending that object is most adequately cognized upon which your attention is fixed. That is not to say that you are totally unaware of everything else. When you look at an object, though you see it most clearly, yet you do see other things around it, but you see them more dimly the more remote they are from whatever you are looking at. Similarly, in all attention you are aware, though more vaguely, of other things besides that on which you are intent. If you read this paragraph attentively, it is upon the meaning that your attention is concentrated, but you must also see the printed words, though you do not perceive them as adequately as you would if you were hunting for misprints. More dimly still, you are aware, perhaps, of the crackling of the fire in the grate, the smell of a leaky lamp, and

the like. Relax your attention for a moment and you may notice other objects of which you could not say that you were previously aware at all—a slight stiffness in the neck, a slight irritation from your clothes, the low sound of voices in the next room ; and yet, though you did not notice them before, they may very likely have affected you in the way of contributing to your feeling of ease or discomfort. But again, when you relax your attention to psychology, any number of other thoughts may crowd in upon you, claiming your attention just as the schoolboy's is claimed when it wanders from his lesson ; so long as you were absorbed in your studies these thoughts were checked or, as it is called, inhibited. Thus the preparation for cognition which we call attending consists in inhibiting totally or partially the perceptions and thoughts of other things and in facilitating cognition of this one object by the excitement of appropriate dispositions.

Attending always involves characteristic movements and postures of the body. Take first attentive perception. We can generally tell whether a man is watching or is smelling something or is listening to something. He turns his head to the object if he wants to see it, and his eyes so that they converge upon it, sniffs so that he may smell better, turns his head so that he may hear better, and so on : in short, he adjusts his sense-organs so that perception of the object in which he is interested is facilitated and perception of anything else rendered more difficult. Every one knows how a stiff neck seems to deaden

our senses, simply because it interferes with our freedom of movement.

We usually make similar movements of adjustment when we try to image particular objects, though the movements are then less noticeable. Try to recall a smell and you will find yourself sniffing gently; try to recall the appearance of your home, and your eyes will wander as they would if you were actually looking at it.

Again, intent thought has its characteristic attitudes. The brow is raised or bent, the neck is craned forward or the head thrown far back, the teeth are pressed against the lips, the hands are clenched, perhaps breathing is checked; the general posture is rigid, and the sensory experiences arising from these attitudes combine into that feeling of strain which accompanies concentrated attention.

It has already been pointed out that what we call inattention in a child is often simply his attending to something other than us and our words, and that absolute inattention is unconsciousness or something very near to it. But of course there are degrees of attentiveness. In certain moods we find it difficult to take more than a momentary interest in anything; we say that we feel dull or dispirited. The teacher has to be careful to distinguish this real inattentiveness in his pupils from merely misdirected attention. The latter is due to boredom with their lessons, and to the superior attractions of other things; the former is very probably due to hunger or ill health or fatigue or bad ventilation of the class-room. The difference

of bodily attitude is a sure guide for watchful eyes. In the one case the child is evidently alert, he is looking at something, or thinking actively about something; in the other his whole body is relaxed, his head falls slackly forward, his eyes look dull and vacant.

As we shall see in later chapters, attention has important secondary results which follow from its success in producing more adequate cognition of an object. What has been adequately cognized—clearly perceived or well understood—is better related to our whole system of knowledge, produces therefore more effect on our cognitive dispositions, and so is better remembered, more easily recalled, and more effective in influencing subsequent acts of cognition.

§ 5. Perseverance and Initiative. At the end of Chapter IV the student may very likely have felt inclined to raise this objection against psychology, that it is too intent on the plasticity or impressionability of mind, and ignores initiative altogether, though nothing differentiates one person from another—nay, one child from another—more than the varying degrees in which they display initiative. The preceding sections of this chapter, in which the selective character of mental activity has become apparent, may have helped to remove the difficulty, which really arises from our inveterate tendency to break ourselves (or at any rate one another) into two parts in our thought, one a mere machine, the other a wholly free inventor or creator. If we look fairly even at the process of imitation itself, we shall see our mistake. A child

imitates its elder, and we who watch are apt to say: 'But, after all, he has produced nothing new.' But notice the child's delight in his success. Try to put yourself into the child's place, and you find that he has done something new: he has learned a new accomplishment and acquired a new power. You say, 'It has been done before.' But the child might fairly reply, 'No, for *I* have never done it before; as my doing it is a genuine novelty: I have not simply repeated by rote what I could do before, but have organized my previous powers in a new way.' Later in life, of course, this direct imitation of others becomes of less importance, but it remains true that originality does not consist in absolute independence of the world about us or the creation of absolute novelties (which is impossible), but in intelligent reorganization of knowledge and powers already possessed so that we continue to grow.

We have, of course, to acknowledge the great variety of native endowments, and therefore of interests, which cannot well be brought under the heading of Instincts,[1] and it may be admitted at once that to be able to recognize, and understand and allow for them is of the utmost practical importance and comes only from experience of life and sympathetic observation of others. There is, however, a more precise sense of the word 'initiative' which merits a few lines of separate consideration, and in which the quality does seem to be more marked in some minds than in others, though

[1] Cp. p. 77.

present in some degree in all. One person seems to be comparatively at the mercy of chance circumstance, merely receptive, dependent in all his thoughts and deeds on his training and surroundings : another seems far more the master of his destiny. This difference is not merely intellectual : considerable initiative is often displayed by people of no great intellectual ability, though not always to very good purpose. It is also, as Professor Royce has pointed out, a difference in what we ordinarily call perseverance—in persistence of conation. Suppose that in the execution of a purpose we are confronted by some obstacle. We may give in, enslaving ourselves to circumstances. On the other hand, we may persist in our original plan (e.g. if we go on moving a heavy weight in spite of fatigue), or we may vary our method, pursuing different devices until we hit upon one which is successful. In the latter case, of course, the rapidity with which we reach success will depend largely on our experience and on fertility of imagination ; but in either case, if persistence leads to success, we feel ourselves more than usually the authors of our activities.

The weakness of children in this respect is striking. As we have seen, their purposes are commonly very short-lived in face of difficulty. When their movements are sufficiently under control to enable them actively to pursue any object on their own account, they are almost entirely at the mercy of their perceptions. A new attraction crosses their field of vision, and the pursuit of the old one is abandoned. Yet there has

already been noticed a tendency in them to repeat their movements, not for any ulterior end, but for the movements' sake. It is exemplified in their fondness, when they are still very young, for making one sound with their lips time after time. Or watch a small child at play, running about by himself, absorbed in the joy of an activity which has no ulterior aim. He finds that he can run nearly as fast as his playmates, he pursues them, and a purposeful game follows. But after a few minutes the purpose of the game is forgotten in the delight of running, and you may see him begin to run after his friend but continue his course regardless of the fact that his friend has stopped or turned aside. He is persistent in running, not persistent in the more organized conation of playing a game.

The child's primitive persistence in enjoyable movement is important to the development of motor control, without which even instinctive expression is generally clumsy and often futile; and in it we may find the germ of conative persistency in general. It becomes purposeful when the child discovers the power over objects which various movements give him. Persistency prompted by curiosity takes the form of a continual prying into and playing with the things around him, and this, as his interests grow, leads gradually to the desire for knowledge. At a later date perseverance in any pursuit becomes strengthened by feeling of pride in success and shame at failure, especially if the child is brought up among others whose prowess he admires or with whom he vies.

References for Reading

§ 1. On imitation, cp. Baldwin, *Mental Development*, chs. v, x–xii; McDougall, *Introduction to Social Psychology*, pp. 102 ff.; Mitchell, *Structure and Growth of the Mind*, lecture vi; Preyer, *The Mind of the Child*, Part I; Stout, *Manual of Psychology*, Bk. III, ch. ii.

§§ 2, 3. On impulse and volition, cp. Angell, *Psychology*, chs xvii, xx, xxi; James, *Principles*, ch. xxvi; McDougall, op. cit., ch. ix; Stout, *Manual*, Bk. IV, ch. x.

§ 4. On attention, cp. Angell, op. cit., ch. iv; Baldwin, op. cit., ch. xv; James, op. cit., ch. xi; Pillsbury, *Attention*; Stout, *Analytic Psychology*, vol. i. pp. 180–254, and *Manual*, Bk. III, ch. ii, § 3, and Bk. IV, ch. x, § 11.

§ 5. On initiative and perseverance, cp. Royce, *Outlines*, ch. xiii

CHAPTER VII

FEELING

§ 1. Pleasure and Unpleasure. In previous chapters we have frequently insisted upon the many-sidedness of actual mental behaviour, and have warned the student against the error of supposing that the psychologist's analytical procedure, whereby one after another of its aspects is separately considered, implies the separate existence of intelligence, for example, or of will. This warning needs to be repeated when we come to consider mental behaviour from a fresh point of view. We are apt to regard our 'feelings' as something apart from our intellect and to oppose one to the other in a way which is inaccurate and misleading, as very slight analysis will show. If you ask any one to give you instances of experiences that he finds pleasant or unpleasant, he will very likely begin by saying that the odour of a rose is agreeable to him, or the taste of sugar, or the colours of the rainbow, whilst the smell of rotten cabbage, the taste of a strong infusion of quinine, the sound of a file scraped on metal are unpleasant. He cites, we are supposing, sensory experiences, and thus at once connects feeling and cognition; yet even so he has given but a partial account of his experiences: he has left out the tendency to linger over the scent of the rose, to get away from the stink of the cabbage.

We assumed that he is likely to begin with instances drawn from sensory experiences because so many of them seem to be pretty constantly accompanied either by pleasure or by unpleasure: in more technical language, they seem to have each its constant affective (or 'hedonic') tone. For instance, most people find bitter tastes unpleasant, unless they are (as in beer) very weak; but sweet tastes pleasant, unless they are, like the taste of saccharin, so intense as to produce incipient nausea. As a rule it is when sensations are of moderate intensity that the differences of their normal feeling tone are most noticeable: you will discover that they all become unpleasant when very intense—a very loud voice is commonly as unpleasant to the hearer as it is harmful to the speaker—whilst most of them are mildly agreeable if sufficiently weak. Even pain itself is not always unpleasant: many people rather enjoy pricking themselves lightly with a needle, or gently probing an old cut.

But though it is true that at an appropriate intensity some sensory experiences are usually pleasant and others the reverse, yet the feeling tone of any given sensory experience is not unalterable. It may be altered in various ways.

Everybody knows that sugar is unpleasant during a bilious attack, and the jaundiced eye takes no pleasure in the fairest colours. Abnormal conditions of health, that is, modify the ordinary feeling tone of sensory experiences.

So also do long duration and frequent repetition of

the experiences, but they have various results according to the circumstances. A fine concord of sounds will please us for the moment, but if it continues to force itself upon our attention without alteration, it soon annoys us. On the other hand a beautiful view, after we have lived with it for some months, does not indeed annoy us, but ceases to attract our attention so vivaciously as before, and the pleasure we felt in it grows less intense. Similarly, if you go on to the moors from the filthy odours of a town, you notice the fresh smell of heather and bog-myrtle far more than if you live there long; and the smoker who has stopped smoking for a week finds much more pleasure in the flavour of tobacco when he takes his pipe up again. But at the same time that repetition deadens feeling it often creates craving. The constant smoker gets less vivid pleasure from his pipe than one who smokes more rarely: but deprive him of it and a highly unpleasant state of craving ensues, because the habit has produced an organic need. There are some cases, too, in which repetition transforms unpleasant into pleasant sensory experiences. For example, the tastes of tomatoes, tobacco, and of many popular drinks are at first distinctly unpleasant. Here again the change in feeling tone very likely depends in part upon organic changes produced by repetition.

Another way in which the normal feeling tone of sensory experiences may be altered is best exemplified, perhaps, in sensations of smell, which are particularly apt to recall the dim past. For children especially

houses are apt to have characteristic smells, and in later life one is surprised at the lively pleasure occasioned by some odour which in itself would be indifferent or even disagreeable until one remembers that it used to pervade some house where in youth one spent happy days. The reader will easily think of other examples of feeling-tone due to Association: we may say in short that when a sensory experience has in the past been prominent in some notably pleasant or unpleasant total experience, it is likely when repeated to have the feeling-tone of the whole past experience.

Lastly, much depends on the relation of sensory experience to the trend of activity at the moment. No experience is pleasant if it interrupts and obstructs our work or our desires: the more keenly we are engaged, the more annoying is the distraction. You may ordinarily delight in music, and your pleasure in it is accompanied by a movement of attention towards it, so that you may hear it as clearly as possible; but the sweetest strains annoy you, and you turn petulantly from them, if they prevent you from attending to a mathematical problem on the solution of which your heart is set. Schoolboys are, however, usually less sensitive in this respect than adults! They are less intent on what they are doing and are therefore more easily distracted. Whether this relative indifference is due to the nature of their work or to the nature of the boy himself, is a question upon which the teacher may reflect with advantage.

So influential upon feeling is the relation of sensory experiences to our interest at the moment that what would ordinarily be most unpleasant may be welcomed with joy if it furthers a strongly held purpose. No one likes being jolted, but the roughest journey is enjoyable that takes the schoolboy home: a bitter draught may be agreeable to one who believes that it will save his life. No doubt there are limits to the alteration of unpleasant feeling: an exceedingly intense bitterness, an almost blinding light, violent bodily pain, are so insistent that we can scarcely keep our attention fixed on the thought of the purpose for which we endure them. Yet if that purpose is strong enough, their unpleasantness may be at any rate much alleviated: not even the martyr, perhaps, enjoys his agony, nor the man who has to undergo a vital operation without anaesthetics, but probably the pain of such experiences is much less unpleasant than it would be if it were endured for no good purpose whatever.

When we pass beyond sensations, this relation of feeling to purpose becomes all-important. All failure, interruption, or obstruction of a purpose or a purposive activity is unpleasant; its successful progress is pleasant.

Consider first the feelings which accompany your movements. Of all so-called bodily pleasures there is scarcely any so intense as that of delicately and accurately adjusted movement—of a clean drive or cut, for instance, or of a hard return at fives or tennis—whilst the fumbling, stumbling movements that we make

when we are ill or tired are extremely unpleasant. We noticed in Chapter III the pleasure which the infant takes in his own movements and the supreme joy which growing mastery over them brings to him.

But the pleasantness of a movement is greatly increased when it is not only well-adjusted, but also produces a result designed. When the ball goes just where it is aimed, between the fielders to the boundary, your pleasure is not merely in the clean hit but in its success.

Pleasure in success is more intense the greater the difficulties that are overcome, so long as overcoming them does not produce exhaustion. You can get the pleasure of a clean hit if a small boy tosses you up half-volleys ; but to get the full enjoyment of playing a good innings, you need opponents who cannot be treated with contempt. The same holds good of intellectual pursuits : the more difficult the problem you have to solve, the greater your pleasure in solving it. An aim which can be achieved without effort provokes no strong desire ; you are moved to more exertion by difficulties in your way, and the success of your increased activities gives you proportionately greater gratification. No doubt an unexpected obstacle may for a moment be unpleasant, because it baffles you, but your pleasure is heightened when you find that you can overcome it. On the other hand, an unsurmountable obstacle against which you struggle vainly, as a prisoner against prison walls or a horse in the coil of the lasso, is unpleasant proportionately to the strength of your

desire for that which it prevents you from attaining: the more anxious you are to keep an appointment, the greater your annoyance if your bicycle breaks down on the way.

But here again the teacher must be careful to take fair measure of his boys and not judge them by himself. They are more quickly discouraged by obstacles; the end to be achieved does not, perhaps, loom so large in their life as we imagine; we need to make their courses relatively smooth, or they soon lose heart. They are also weaker than we in power of analysis, and in face of difficulties they often make 'wild shots' for which their teachers find it difficult to account. Indeed, it may be that a lad's method of dealing with difficulties becomes the more 'tremblingly wild' the more anxious about the result he is.

We cannot account for the pleasantness of sweet tastes, or the unpleasantness of quinine, or the other normal feeling-tones which accompany sensory experiences, as resulting from successful or obstructed activities, though we have seen that the relation of these experiences to our activities may modify their normal feeling-tones. But some pleasures and unpleasures of perception may be brought under this principle from the outset. Look at a design for scroll-work or embroidery, or listen to the rhythm of poetry or music: they are pleasant if we can without excessive trouble grasp and follow them, but unpleasant if they are so irregular and formless or jerky that we cannot take them in. They may be very complicated, because

here again difficulty often adds to pleasure if it stimulates us to greater activity and is surmountable without undue strain; but they must not distract and baffle us. Perception involves attending—i.e. trying to apprehend an object better; and if the form of the object defeats this attempt, it displeases us. Of course we must remember that what is so simple as to be dull to us need not be dull to the child; but too great simplicity is just as dull to him as to us.

The charm of novelty and variety, the unpleasantness of monotony, may be explained on the same lines. We saw in the last chapter that the keenest attention is aroused by change in what is familiar; change, if it is not so extreme as to baffle us, gives scope for more vigorous exercise of our activities of perception and thought, whilst a monotonous experience constricts them. To get away occasionally for a holiday, for instance, is desirable not only for the direct physical benefit wrought by a change of air, but also because we find new directions for our activities. Sheer monotony, of course, produces sleepiness, but even short of that there are many occupations which bore us by their sameness and yet demand attention. To spend long hours adding up accounts or correcting elementary examination papers is extremely unpleasant work, because it requires close attention but does not provide a corresponding amount of variety: attention is forced, not spontaneous. How grateful to the examiner is the occasional jest or entertaining howler! Similarly, the pupil suffers who has to

attend to lessons delivered in a dull and droning voice; the monotone makes him sleepy, no change of expression calls his attention to new points in the subject-matter, and yet he is bound to listen.

Pleasure and unpleasure seem to stand in a double relation to conative activity. They arise for the most part from its triumphant progress or its obstruction and failure, as we have seen in the preceding paragraphs, but they are not merely secondary phenomena, rising and falling with the success and failure of purposive activity. It was pointed out in Chapter III that the infant is more likely to repeat movements which bring gratification than unsuccessful movements, and that his progress is largely due to the gradual elimination of the latter. There is no forethought here, of course; but if we turn to our own conduct we find that our feelings still play an important part in determining the direction which we intentionally give to our activities. We desire the repetition of pleasant experiences and try to avoid those which we have found unpleasant: no one goes back, unless he need, for a second holiday to a place where he found nothing to do; no child looks forward happily to school, if he is bored with it. No doubt we often from principles of duty or for the sake of some ulterior advantage do what we know will not be pleasant and forgo what we think would be so, but other things being equal we try to repeat pleasant experiences and to avoid those which we have found disagreeable. Feelings are thus influential upon the direction that our purposes take.

§ 2. **Other simple feelings.** So far we have asked the student to consider only two qualities of feeling, and many writers consider that there are no more. But this view seems to be mistaken. Many of our experiences do not seem to be accompanied by pleasure or unpleasure or by any emotion, but to be neutral—dressing, for instance, or undressing, or sharpening a pencil, walking to the post-box, and other habitual or very simple occupations. Yet, though the point is disputed, there does seem to be some feeling present: neutral feeling is not merely a long name for nothing at all. Some psychologists maintain also that calm and excitement, strain and relaxation, are pairs of feelings parallel to pleasure and unpleasure. We have spoken several times of the feeling of strain or tension which accompanies close attention. You see a flash of lightning and wait intently for the thunder-clap; when it is over, your feeling of strain passes into one of relaxation. Similarly, your calm feeling as you lie on a sunny cliff overlooking the sea passes into excitement if you catch sight of a bather struggling out of his depth. It is retorted that these alleged feelings are not pure feelings at all, but complex sensory experiences. The feeling of strain accompanying attention, for instance, is due to your drawing your brow, holding your breath, and putting your whole body in a rigid posture: these movements and tensions excite nerve-endings throughout the body, but as your attention is directed elsewhere—to that bird or this mathematical problem—the resulting sensory experiences merge into the total

feeling which we call strain. We cannot go further into this question here. The student may very well speak of feelings of calm and strain and the like, as long as he remembers that there is uncertainty about their origin and about the correct description of them.

References for Reading

§ 1. On pleasure and unpleasure, cp. Angell, *Psychology*, chaps. xiii and xiv; Stout, *Analytic Psychology*, Bk. II, ch. xii, and *Manual*, Bk. II, ch. viii, and Bk. III, ch. iii; Sully, *Human Mind*, pp. 1–55.

§ 2. On other feelings, cp. Royce, *Outlines*, ch. vii; Titchener, *Primer of Psychology*, pp. 68–70; Wundt, *Outlines of Psychology*, Part I, § 7, and Part II, § 12.

CHAPTER VIII

FEELING (CONTINUED)

§ 1. Emotion. Whatever may be the truth about feelings of strain and the like, the student will easily convince himself that the character of emotions such as Anger and Fear is largely derived from sensory sources. James has an eloquent passage bearing upon this point: 'What kind of an emotion of fear would be left if the feeling neither of quickened heart-beats nor of shallow breathing, neither of trembling lips nor of weakened limbs, neither of goose-flesh nor of visceral stirrings, were present, it is quite impossible for me to think. Can any one fancy the state of rage, and picture no ebullition in the chest, no flushing in the face, no dilatation of the nostrils, no clenching of the teeth, no impulse to vigorous action, but in their stead limp muscles, calm breathing, and a placid face?'[1] Every emotion has its characteristic bodily expression —who cannot at a glance recognize an angry or a fear-stricken man?—and the expression itself is felt and helps to give its characteristic tinge to the emotion.

Indeed, the connexion between emotion and its expression is so intimate that we can often, to some extent, control the former through the latter. This is an important practical point. If we feel angry, but

[1] *Principles of Psychology*, ii. 452.

determine to look pleasant, or feel afraid, but refuse to show our fear, our emotion is apt to grow weaker; and it seems probable that in societies such as our own, where control over the expression of emotion is inculcated from an early age, emotions are, as a rule, actually less intense than among peoples who see no cause for shame in giving them comparatively free play.

Some restraint there must be in any society upon the expression of emotions. Common life would be impossible if, for example, we all gave free scope to the offensive movements of anger, hitting out at every one who annoys us, as a small child does, and trying to destroy every obstacle in our way. Fortunately, such movements of the limbs are the part of emotional expression which it is most easy to control. We do not find it so easy to govern our facial expression, but neither is it, as a rule, quite so important to do so. As to the rate of our breathing, the beating of our heart, the gathering of drops of perspiration on our skin, these things we can hardly control at all directly, but only by restraining our arms and legs and composing our features.

Children, of course, learn only very gradually how to control their feelings. At first they howl and stamp and flinch or strike quite unaffectedly: as we saw in Chapter V, § 3, many emotions seem to be from the outset connected with special types of instinctive reaction. Here, more perhaps than anywhere else, is the superiority of example over precept apparent. No amount of exhortation from a coward will avail

to produce brave boys, nor can we expect a calm demeanour in children who are accustomed to an irascible and petulant parent or teacher: and the example of their playmates is still more influential.

It does not follow, however, that because the emotions of children are less under control than those of adults, they are therefore more definite and distinct from one another. There are other points to consider besides emotional expression. Try, for instance, to discover in your own experience examples of fear and anger which seem to be probably most like those emotions as small children feel them. The fear which arises when we are startled by a sudden noise, the anger which we sometimes feel against inanimate things—against the stones on a rough path when we are tired, or against the screech of railway-engines when we are trying to get to sleep—these seem to be very rudimentary emotions. Now, if you notice, you will find that they are not so distinct from one another as are, let us say, your anger against a person who has wronged you and your fear of being yourself caught in some wrong-doing. They may be equally or more intense, but in quality they approximate to a common type of start or shock and general organic disturbance. They are, as we ordinarily say, irrational emotions, occasioned by percepts and leading to senseless movements and ejaculations; whilst our more developed emotions of fear and anger originate in thought of danger and injury and may lead to a connected train of purposeful actions.

Observation of children shows us further that whilst

some emotions are primary—anger, for example, and fear, and affection or (as it is also called) tender emotion, and the others that we mentioned in connexion with the primary instincts, and in addition, according to most writers, joy and sorrow—others can only occur in those who have already experienced the primary emotions. Thus awe could hardly be felt by any one who had not already felt both admiration and fear, and admiration itself involves wonder and that feeling of inferiority which we called abashment; whilst only those who have suffered sorrow can pity it.

A certain excitement is common to the beginnings of all emotions, for they all arise from situations in which some mental activity is more or less abruptly interfered with, and our purposes are forced into a wholly or partially new direction. Obstacles that hinder your desires anger you, and you turn to demolish them; something frightens you, and you turn from your path; you grieve at the loss that cuts your hopes or habits short; you rejoice when suspense is ended, when you secure what you wished and are freed from anxiety lest you should fail, or when new possibilities of happiness are opened out to you. Whilst some emotions, however, such as grief, tend to depress our activities, both bodily and intellectual, others, like joy and anger, have a stimulating effect, if they are not too intense. But very violent feeling always destroys activity and leaves us in the end exhausted and prostrate. We are 'paralysed with terror', 'speechless with anger', no less than 'motionless with grief', and

even joy may be so intense that we can no longer dance for it.

§ 2. **Moods.** When the first violent outburst of joy or grief is past, there often follows in us a long period of gaiety or melancholy; similarly anger, especially if it has been pent up, is apt to turn into an enduring mood of sullen bitterness; and so too with other emotions. Thus moods may occur as after-effects of emotions; and on the whole they are quieter states, they do not involve so much organic disturbance, nor give rise to such wild utterances and gesticulations. On the other hand, they are far more durable than emotions, which soon work themselves and us out.

But we often meet with people whom we call 'moody', who, nevertheless, do not seem particularly prone to violent emotions, and the student will recall that he often says of himself on one day that he feels merry, on another that he feels depressed, though he has not had any occasion for joy or sorrow. Moods may depend upon conditions of bodily health: for example, nothing is so depressing as a bilious attack. It is always worth while, when children seem to be plunged in abnormally persistent moods of melancholy, anxiety, sullenness and the like, to consider whether their mental state is not due to their bodily health, and eventually to seek the advice of a physician. Our physical surroundings also exercise a great influence on our moods. We feel enlivened by bright weather, clear atmosphere, cheerful rooms, whilst in a dark and dismal or stuffy class-room we feel too much depressed to attack our work with

vigour; and in fact, of course, we are probably more 'fit' bodily in the one set of surroundings than in the other.

Moods, however they arise, are always very hard to combat. If you begin the day in melancholy, everything about you appears in darkest hues and serves as food for melancholy reflection; gloomy ideas crowd in upon you, and what might otherwise have been cause for joy remains unnoticed. But when you feel gay, nothing goes wrong or can possibly go wrong; you see good in everything. In short we tend to notice only what is consonant with our mood, and therefore our mood is not easy to alter.

§ 3. Sympathy. So far we have considered emotions as they are aroused in us by circumstances which directly affect our own interests. But a moment's reflection will convince the student that he often experiences emotions, not because he is thus directly affected by circumstances, but because some one else in whom he is interested experiences them. You observe that your friend is indignant at unjust treatment, and you feel the same indignation; you share his disappointment at failure or his joy and elation in success. Emotions thus occasioned by similar emotions observed or thought to be present in others are called sympathetic. There is not a special emotion of sympathy, as there is of anger and fear, unless sympathy is loosely used as equivalent to pity: we may sympathize with—i.e. feel with—another person in his anger or joy or grief or any emotion.

The simplest and earliest form of sympathetic emotion has been well called 'contagion of feeling', and it is closely connected with rudimentary imitation.[1] It occurs probably in all gregarious animals, and certainly in quite small children. If you frighten one of a flock of rooks or one of a herd of cattle, all behave as if they were frightened; if one of your dogs starts to bark angrily at the postman, the rest follow suit; an infant cries when he hears others cry and smiles when he sees you smile. In these instances we see that the expression of emotion spreads from one individual to another, and in all probability the emotion itself spreads also. Certainly it is often so in ourselves: we are likely to feel merry when our companions are gay, and a downcast melancholy visage may act as a wet blanket on the spirits of a whole dinner-party. The same is certainly true also of quite young children who have passed out of infancy: sympathetic emotion is often very strong in them. The following is an instructive example. A small boy of four years old was found crying. Asked for the reason of his sorrow, he replied, 'Because my poor husband's dead and gone to heaven,' this being the reason that his injudicious nurse had given for her tears. The child's emotion was perfectly genuine, and not assumed, though his account of it seems ludicrous to us.

One sees how rudimentary a form of sympathy this contagion of feeling is. The boy did not, as we say, 'enter into' his nurse's feelings: he was not capable

[1] See p. 89.

of sympathizing with her emotion *as hers*; he merely had feelings similar to hers, and they were due, not to her story, but to her tears. A sympathetic adult friend would not simply have reduplicated the woman's sorrow, but would have understood the occasion and direction of it, and probably would have come nearer than the boy to feeling sorrow of just that particular tinge. But this more developed form of sympathy is impossible until the powers of imagination and thought have made considerable advance.

Granted imagination and thought, we can sympathize with the emotions of those whom we do not see. You learn that your friend, far away from you, has suffered a loss or has attained his heart's desire, and, because you know his nature, you can understand how he will be affected, and can share his grief or joy. You can even sympathize with what you suppose to be the emotions of total strangers, whose story you read, let us say, in the newspaper; though here you may easily be mistaken, because you do not know their characters.

For there is a limit to the range of sympathy. I cannot really sympathize with a man whose character I cannot understand. He may be an acquaintance, but if his character remains strange to me and I cannot interpret him by myself or by any one whom I do understand, then I cannot share his emotions. His sentiments are not akin to mine; he likes what I detest, bears troubles lightly which seem desperate to me, grieves over what I call trifles, is calm when I am angry, frightened where I am undismayed. Thus, except,

perhaps, in the common human joys and sorrows over birth, death, and the like, Saxon finds it hard to sympathize with Celt, European with Oriental, white with black, and not least old with young. We have been told by a remarkably clever and reflective girl of ten that 'grown-ups *never* understand children', and this she maintained as a rule without exceptions. Probably it is true that no amount of goodwill and taking pains will perfectly bridge these natural gulfs; but, nevertheless, it is a mistake to suppose that our range of sympathy is unalterably fixed by nature. Interest yourself in others, watch their ways, take trouble to understand their motives and their way of looking at things, and you will probably become better able to share their feelings. There are some people, mostly deficient in emotion themselves, who seem to lack the power of sympathy altogether; but as a rule defective sympathy is largely due to not trying to understand others, and is so far remediable.

In ordinary language sympathy is generally confused with love and with pity or compassion and the compassionate relief of distress. But though as a rule these three are closely connected, it is not always so. One may feel genuine affection for a person whom one does not understand well enough to sympathize with. One may catch a spirit of gaiety or melancholy from one's companions without feeling affection for them. Sympathy with pain and grief need not lead us to pity and relieve them: if we are selfish, we may simply turn away. If we seek to alleviate distress, it is not merely

because we sympathize, but either because the sight of woe arouses in us a fresh emotion that the sufferer does not experience—viz. pity or compassion—or else because, though we are not of a pitiful disposition, we regard it as our duty to succour the unhappy.

Usually, however, love, sympathy, and compassion do go together. Love generally involves some degree of sympathy from the outset, and even when this is not so, strives after sympathy and generally attains it; for if all our attempts to understand those we love are vain, our love for them is apt to perish. Again, if we are interested enough in any one to understand and sympathize with him, we probably have some liking for him, since we avoid rather than study those whom we dislike. Moreover, we wish also to be understood ourselves and to have our feelings shared; and the growth of common interests and of harmony in feelings makes smooth the way for affection to enter in. And where love and sympathy are united, compassion towards distress naturally follows. Unsympathetic love may lack the necessary insight, and loveless sympathy the necessary tenderness; but love always wishes well to the beloved, and when it is illuminated by intelligent sympathy, it issues in compassionate sorrow for his distress and strives to alleviate his trouble.

Thus popular thought is not so far astray when in calling any one sympathetic it implies that he is also affectionate and kind-hearted; for he usually is so, and if he is not so, his power of sympathy is of no use to any one but himself. Sympathy alone may enlarge

the range of a man's experiences, but it binds him to no one and no one to him; love alone will tie him to others, but love alone is ineffective because blind; love and sympathy together not only bind the members of a family or any social group to one another, but lead them effectively to help one another and to promote the common good.

§ 4. **Sentiments.** In the very small child emotions arise for the most part sporadically and disconnectedly, just as his impulses do. He is angry, frightened, full of wonderment, joyful and sad by turns, passing easily from one state to another as the events of his life compel him. But as he grows, there takes place a development towards system in his emotions, no less than in his purposes. They become organized round certain objects, just as his desires become organized: in fact the gradual organization of emotions and of desires is the same growth viewed on different sides. He learns, for instance, to love his parents, and his love does not mean simply that he experiences the tender emotion of love or affection in reference to them, but expresses itself in a variety of other emotions—joy if he wins their approbation, remorse if he offends them, sorrow if they leave him, and so on. His love is not exhausted in any one of these emotions, but is rather a complex disposition to feel them all on different occasions.

Complex emotional dispositions such as this, centring round some definite object or objects, and expressing themselves in a variety of actual emotions, are called sentiments; and if we consider our own experience,

we notice at once that our most conspicuous sentiments are varieties of love and hate, liking and disliking. Now let the student reflect what kinds of objects he likes and dislikes. He will probably think first of individual persons—his parents, friends, and companions, his enemies, too, if he has any—and naturally, for not only do sentiments referring to individual persons arise first,[1] but they are as a rule particularly complex and dominant. Persons stand to us in a greater number of different relations than do things, and can therefore arouse a greater variety of emotions. The child may be fond of his toys, just as he may be fond of his mother or his nurse, but the number of emotions that he can feel about his toys is far more limited. Those which he feels about his mother depend not only on his conduct towards her, but on hers towards him, and as he grows older, the mutual relationship of the two becomes at once more complex and yet better understood; but if he is to experience any considerable variety of emotions about his toys, he must imagine them to be alive and to behave towards him as persons. So, too, a small girl may have for a time a strong sentiment of affection for her doll: but by and by her imaginations about it are felt to be too unreal, her interest in it flags, and the sentiment, being incapable of further development, fades away.

No doubt there are people whose lives seem to be dominated by sentiments which relate to things and

[1] Cp. Stout, *Groundwork of Psychology*, p. 225. The whole of that admirable chapter should be read with care.

not to persons: no person is so dear to the collector as are his old books or coins or china jugs. But even the collector's sentiment is not purely for things; he loves not merely his treasures themselves, but the pursuit of collecting them, and the pride which he takes in them is really a variety of the self-regarding sentiment, to which we return below.

Throughout our lives we are brought into continual contact not only with other individual persons, but with institutions and groups of persons. As the child grows older he comes, if his life is happy, to love his home and family as a whole, then his school, perhaps his county, his country too, and the like, though, of course, his sentiments towards these more complex and massive objects cannot develop until he is able to comprehend their nature and his relation to them. When they do form, these social sentiments for institutions and groups, together with the so-called 'abstract' sentiments for beauty, honour, freedom, and the like, which are a still later growth, sometimes possess men far more strongly than love or hate of individual persons; and they are the basis of the enthusiasm which has actuated most great patriots, philanthropists, artists, and reformers, and without which notable and enduring success is improbable.

It has often been said that feeling is the conservative factor in life, and in so far as this statement is true at all, it must refer to sentiments. A strong sentiment once formed is not easily altered. Our likes and dislikes often persist even when we recognize that they

are unreasonable: we have a lingering regard for this old friend, though we know he is a scamp; we cannot really welcome that old antagonist, though we acknowledge his virtues; a man may seriously disapprove of his country's action, or may suffer public injustice, and yet remain as patriotic as ever. A strong sentiment may even recur after lying dormant for many years, as one finds on revisiting the scenes of one's childhood or schooldays.

But though as a rule our sentiments are in this sense conservative, yet there are exceptions. One example is the love of truth—i.e. the love not merely of truthful speaking, but of true knowledge, for it is often destructive of objects to which one is deeply attached. Driven by this sentiment a man may find himself compelled to abandon long-cherished beliefs and perhaps to lose the companionship of valued friends and to separate himself from societies and institutions to which his views are repugnant. In most people old sentiments, which are also old habits of thought and will, prove the stronger, so that as a rule the love of true knowledge is the feeblest of the sentiments; but when it is dominant, it is not properly called a conservative force.

Finally, a few words must be said here about the sentiment which is connected with one's thought of oneself—the self-regarding sentiment, as it is commonly called—though we shall have to return to this subject in the last chapter of this book, when we shall be concerned with the consciousness of self. Of what nature is the self-regarding sentiment? Is it a single

sentiment at all, or only a single name for several sentiments? The traditional answer is that it is a single sentiment, and the traditional name for it is self-love. But when we call a sentiment love, we seem to imply that the predominant emotion in it is affection or fondness or tender emotion, and this does not seem to be always or even usually true of the self-regarding sentiment. Children no doubt may often rightly be said to be fond of themselves, but if we say of an adult that he is fond of himself we do so reproachfully, implying that he is selfish and vain. The higher form of self-regard we should rather term self-respect, and the self-respecting man is not in love with himself under all circumstances. He prizes right and honourable behaviour in himself as in others, but if he falls far short of his own standard of well-doing, he despises and sometimes even detests himself. The fact seems to be that the self-regarding sentiment takes a great variety of forms, self-love, pride, and self-respect being the most important. The thoroughly selfish and egotistical man loves himself in every aspect and activity of his being, and being thus self-centred is unable to love any one else. His self-love often appears in the form of vanity: he loves to be admired by others. Pride, unlike vanity, is hardly to be called a form of self-love, though it may go with mild self-love. The proud man's sentiment for himself rests upon a settled belief in his own excellence: others may or may not admit his superiority, but he himself never doubts it. Thus the proud man measures himself by the

opinion he has of his fellows; but the self-respecting man's standard lies rather in his ideals of what is right and worthy. We always oppose pride to humility, but we do not oppose self-respect to an honourable humility. For there is not only the base humility of the servile character, but there is also an honourable humility that goes with reverence for what is good and noble, and this humility is found in those who most respect themselves, since they are most aware how hard and endless is the service of good, and how small their greatest efforts are in comparison with all that ought to be done.

References for Reading

§§ 1, 2. On emotions and moods, cp. Angell, *Psychology*, chaps. xviii and xix; Calkins, *Introduction to Psychology*, ch. xx; James, *Principles*, ch. xxvi; McDougall, *Introduction to Social Psychology*, chaps. iii and v; Mellone and Drummond, *Elements of Psychology*, ch. ix; Ribot, *Psychology of the Emotions*; Stout, *Groundwork of Psychology*, chaps. xv and xvi, and *Manual*, Bk. III, ch. iv.

§ 3. On sympathy, cp. Baldwin, *Social and Ethical Interpretations*, pp. 229 ff.; McDougall, op. cit., pp. 91–6, and 168–73; Stout, *Groundwork of Psychology*, ch. xvi; Sully, *Human Mind*, pp. 106–21.

§ 4. On sentiments, cp. McDougall, op. cit., chs. v–vii; Shand, *Character and the Emotions*, in *Mind*, N.S., vol. v; and Stout, *Groundwork of Psychology*, ch. xvii.

CHAPTER IX

THE COGNITIVE ASPECT OF MENTAL BEHAVIOUR

We have now completed our survey of mental activity viewed as essentially purposeful and as feeling. Throughout the discussion of purpose, however, it was clear that, whatever the end may be towards the attainment of which the higher forms of mental activity is directed, neither the end itself nor the means we take to achieve it is blindly accepted and followed out. Throughout the whole conative process there is a more or less clear knowledge of what it is we are busy about, and in some way or other we are acquainted not only with the progress we are making, but with the things that help and hinder it. We must now look more closely at mental behaviour in this—the cognitive—aspect.

Let the student consider his mental behaviour in each of the following circumstances :

i. He is playing tennis against a dexterous opponent.

ii. He is recalling in detail his last visit to his home or to distant friends.

iii. He is trying to make up his mind whether or not he will sit for a particular examination or apply for a particular post.

In all these cases some kind of awareness or knowing

is involved. In the first, the player's attention is mainly directed to watching the movements of his opponent and of the ball as it travels from one side of the net to the other. His success depends primarily upon his power to see and to interpret his adversary's movements. He does not explicitly set out the various elements in the rapidly changing situation and base his responses thereto upon a reasoned interpretation of them. Time would not allow of that. His own movements follow at once upon those of his adversary. If asked why he did so and so, he answers, 'Because I thought he meant to put the ball in such and such a place;' and yet on more careful reflection he often finds that the thought did not take place in this explicit form. All that really happened was that he saw a certain bodily attitude and responded to it immediately and more or less appropriately. The process is entirely purposeful, but the most conspicuous feature in his behaviour is its dependence on visual sensations and that unreflective interpretation of them which is revealed in his movements.

A less practised player would have many of the same visual sensations, but he would be at his opponent's mercy largely because of his inefficiency in utilizing what he saw. This does not, of course, explain wholly the difference between good and bad players. The easy control and direction of movement have to be learned, but that side of behaviour we have dealt with in the chapter on Habit.

The behaviour of the tennis-player illustrates very

well what the psychologist calls 'perceptual activity'. As we see, it involves the perceptions of the moment and the response to them. This response may take various forms according to our needs at the time, and moreover our experience or our skill may be so slight that we fail to make the fullest use of the opportunity provided by our perceptions.

In the second case, however, another type of object is conspicuous. The student will find himself conjuring up details of his past perceptual experience with astonishing clearness. He sees his friends and hears their voices unmistakably 'in his mind's eye or ear'. There is no external stimulus to account for these things. He knows his friends are miles away. All of us are familiar with similar experiences in which we apprehend absent things that we have once perceived. These Images are sometimes so vivid that we can hardly tell that the things are not really there. In cases of fever they often lie at the back of that 'mind-wandering' which is familiar to every sick-nurse. But normal adults in their normal state of health can usually distinguish between the Percept and the Image.

But now consider the case in which we are deciding whether or not we shall sit for an examination. We are concerned now with pros and cons that have no relation to the sensations of the moment, nor —it may be—to past perceptual experiences of any kind. We may consider such a question in the open fields, as we lie in bed, or as we sit in our chair with books spread before us. We may never have taken an

examination of any kind before. It would not in that case be the image of the examination-room that held us back. We rather ask ourselves what additional advantages will be ours if we pass the test. We try to estimate our present knowledge in relation to that demanded by the syllabus. We calculate what work will be necessary and whether our present undertakings give enough free time. In all this activity, the conative aspect of the mental process is as clear as when we were playing tennis, but instead of dealing with present sensations and the response to them, we are concerned with the future, though this is not the essential difference in the two situations, for an older man might have been considering what would have happened had he taken the trouble to work for that examination years ago, or in the course of our own effort to decide on our course of action we might have been temporarily diverted from our particular purpose to raise the question whether examinations are good or bad things from an educational standpoint. We are indeed free to occupy ourselves with examinations in any context and independently or otherwise of particular cases. Mental activity of this kind is what the psychologist calls conceptual activity or thought. It is obviously more characteristic of adult mental process than of the mental processes of the young child, and it distinguishes the mental behaviour of man from that of the lower animals. Thus it is not uncommon to speak of two levels of consciousness—the perceptual and the conceptual; but to think of psychical

relations in this way sometimes leads the student to overlook an essential feature in the case. The movement is not merely upwards from one level to a higher, from percept to concept. As we shall see, the concept reacts with great enriching force upon the percept. The mental life of the dog and that of the youth are not different merely in the degree of conceptual attainment which the latter has reached. The youth's perceptions are richer, more meaningful, than those of the dog, by reason of his conceptual powers. So in a less degree are those of a child richer than those of the dog, though less rich than those of the youth.

Although we can in this way distinguish between perception, imaging, and conception, and although we shall treat them in greater detail separately, all these activities are actually united, as we shall see, in our everyday intellectual processes.

CHAPTER X

PERCEPTION

We have more than once pointed out that the perception of an object involves more than sensation. As the student looks through the window he sees something, let us suppose it is a tree. He may say that it has a thick round trunk, strong branches, and a smooth bark. He may also remark that this tree is much smaller than the tree a hundred yards farther away—although he will admit at once, when his attention is drawn to the matter, that the retinal impression which he received from the smaller one is actually larger than that which he received from the other.

In point of fact, all that he says about the two trees is based upon certain sensations of patches of colour and of light and shade. Whence comes this something over and above sensation which enables him to say that the tree has a smooth bark and a round trunk? The question raises the problem of perception. In order to answer it, we may remind the student that when he speaks of smoothness, he has in mind what certain things feel like when he passes his hand over them, that the thickness of a thing is best cognized by stretching our fingers or our arms round it, and that the sphericity of a ball and the roundness of a cylinder are realized most fully when our touch sensations reveal

the absence of corners and the regularity of the curvature.

How did we come to *see* these qualities, all of which belong to sensory experience other than that of sight? Of course we did not see them at all in the strict sense, but the qualities which we did see enabled us to apprehend directly the object in all the complexity of our past experience of it. We have become familiar with trees in all kinds of ways and in all sorts of circumstances. We have climbed them, put our arms about them, swung on their branches, watched them sway in the wind, observed them from far and near. The peculiar appearance of individual trees has become associated with the roughness or smoothness of the bark as felt, the look of their branches with their swaying and cracking as we have crept along them, and their changing appearance in relation to other objects of vision as we have approached them or walked away from them have taught us to *see* (or at any rate to apprehend without any conscious inference) that one tree is farther away than another, because of differences in their apparent size.

We might, of course, examine any of our percepts in the way that we examined that of the tree. In so doing we should arrive at the general conclusion that all our perception is essentially *re*-cognition, and that the fullness and richness of this act of recognition are dependent not upon the sensation of the moment, but upon the intimacy and complexity of our past experience of the object which is its occasion. Traces of past

experience are involved in all perception, but when we say 'there is a dog in the garden' we are not conscious of the past experiences which are involved in the statement. They are not, that is to say, explicitly recalled to consciousness; yet, as our analysis has shown, the process of perception implies past experience, and cannot take place without it. We have seen dogs so often, and in so many different circumstances, that even when we only catch sight of a wet-looking little black patch, we may recognize the presence of the animal without hesitation (it is the end of the dog's nose), and adjust ourselves thereto according to the particular needs of the moment.

The examples we have used to illustrate the process of perception may suggest to the student that language is essential to it, but he will remember that the lower animals perceive objects and adjust themselves to them often with great delicacy. A dog readily distinguishes his master among a crowd of other men, and knows him in circumstances of great variety, each of which calls out a special response on his part. As his master puts on his boots or his hat, or takes his stick from the hall stand, the dog runs to the door in great excitement. A bird, a mouse, a saucer of milk are obviously perceived by a hungry cat. Most of our own perceptions prompt responses without the accompaniment of words, often indeed with a very minimum of consciousness. You do not, for example, walk in a beeline as you go from one part of the town to another. You turn corners, cross roads, avoid gas-lamps and

people without any active effort of attention. You may be talking to a companion, and at the end of your walk you may find yourself quite unable to recall a single moment when your movements were specially modified to suit an actual need, though you have probably accommodated yourself in this way many times.[1] The frequency of past experiences of the kind has established what we have previously called a psycho-physical disposition, which now works itself out on the occasion of the appropriate stimulus with the slightest intervention of consciousness. In like manner, an experienced teacher pursues the course of his lesson without any conscious effort to watch the more mischievous members of his class—yet no irregularity escapes his notice, or fails to produce a suitable, though to the casual observer scarcely noticeable, response.

In the young child, all such dispositions are in the making. His mental life is therefore necessarily bound up very closely with his actual environment, as it changes from moment to moment. If he is walking in the road, he must attend to the line of the footpath, the gas-lamps, the people, &c., or disaster would attend him at every turn. Repeated experience leads him to make the necessary muscular adjustments whenever he is about to step across the line of shadow (or of light) which marks the change of level from road to footpath, until finally the muscular changes take place with accuracy and precision with the exercise of little,

[1] Cp. ch. v, § 2, on Impulsive Behaviour.

if any, conscious control, whenever the situation demands it. This leaves the mind free to pursue any line of activity without reference to normal changes going on in our immediate surroundings.

We see, then, how closely the process of perception is related to that which governs the formation of habits. It is possible only because of that fundamental quality of retentiveness which leads to the formation of psycho-physical dispositions. At the same time, it must not be supposed that the development of the perceptive powers is merely a development towards automatism.

The sensory bases upon which our experiences rest are so slight that it is not surprising to find error creeping in, especially when perception takes place under the influence of expectancy. Most people find themselves very unsatisfactory proof-readers. The thought and the particular phrases in which it is cast suggest the words before the eye reaches them. We tend to see what we expect to see, and miss the printer's errors. Under emotional influences, like that of fear, for example, such misinterpretations are particularly common. A nervous person walking along a country lane, finds a miscreant's footsteps in the fall of every leaf; if we are waiting anxiously for a telegram, how many times do we hear the footsteps of the messenger and the pull of the door-bell! Every slight sound is the occasion of such erroneous mental construction. It is clear, however, that *illusions*, which is the name we give to misunderstandings of this peculiar kind,

are not due to any inaccurate working of the nervous mechanism of sensation. The possibility of mistakes of the kind may perhaps be regarded as the price we have to pay for the power which the accumulated but latent fruits of experience give to us in our perceptual adjustments. The sensory element in perception is often so entirely outweighed by those traces of the past which are involved in the process, that the actual sensory object is for us enormously modified or even practically replaced by something else which corresponds more closely to existing and very lively dispositions.

In both perception and illusion there is always present some sensory element, and even those traces of past experience which are revealed when either process is subjected to analysis are also sensory in origin. Ultimately, then, our knowledge of the physical environment rests upon the evidence of our senses.

We all know what Bunyan meant when he wrote of the 'five gateways of the soul', but increasing knowledge has taught us that the traditional five senses do not exhaust the list. Perhaps the most important of the more recently discovered sensations are those which are due to the movements of muscles, tendons, and joints, which play so large a part in enabling us to gain control of our movements, sensations of heat and cold, other organic sensations from internal parts of the body (e.g. in hunger), and sensations of pain, all of which are due to the stimulation of nerve structures specially adapted to respond to a particular type of

stimulus. Further researches may reveal more organs of sense, but the discussion of such questions, and the detailed description of the sensations we know, does not fall within the limits of this book. We may, however, point out that within the same sense—sight, for example—sensations differ in intensity and in quality. A visual sensation may be more or less bright, a sound sensation more or less loud, a sensation of pressure may be more or less light, and so on. These are differences in intensity. Again, visual sensations vary in colour, sound sensations in pitch, temperature sensations may be hot or cold, and taste sensations may be sweet or salt, sour or bitter. These are typical of what are called qualitative differences, and the student will readily notice how much more delicately these differences are related in the case of sight and sound than in the other cases. We have a scale of colour, and a scale of pitch corresponding to a mathematical scale of differences in their stimuli. Smells and tastes do not lend themselves to treatment of this kind, nor indeed do any of our other sensations.

It is particularly important that the student should realize the difference between the sensation and the stimulus to which it owes its rise. Most people see sufficiently for all practical purposes, without knowing anything about vibrations of the ether or the changes which they cause in the minute structures which lie in the sensitive layer of the retina. The psychologist is not directly concerned with either of these things. It is in seeing as we all experience it that he is interested.

The physicist or the physiologist tells us that the other things happen, and we accept his word for it, but we are not conscious of these events; they do not enter into the experience of the person who sees in the way that colour and brightness and light and shade do. These, then, are the sensory objects the apprehension of which he discusses. A like distinction is also to be drawn between all other sensory objects and the stimuli to which they owe their appearance in consciousness.

Moreover, in actual experience we never merely sense colour, for instance, but perceive a coloured thing. The mental processes which are set up by sensory stimuli are always interpretative, and therefore perceptual in character. Whenever we see, we see something. Ordinarily we can name or describe it. So with what we hear or touch or taste. But these interpretations had to be learnt, except in so far as precise reflex machinery provided for right response to such stimuli. Something has already been said on this subject in the chapter on Infancy.

In general, the tendency is to shrink from those contacts which produce discomfort, and to seek those which give satisfaction. This shrinking or seeking attitude which the infant learns to adopt towards objects around him is his first interpretation of his sense experience. It represents what they mean to him; he is beginning to perceive. Conscious purpose is still undeveloped, but when he hears a voice, his head turns, seeking, as it were, the visual sensations

which usually accompany that sort of sound. His mental life is at first chiefly of this order. Increase of motor control greatly enriches his sensory experiences and deepens the significance of the things around him. In other words, percepts become fuller. Colour differences, differences in size and shape, position and distance are all perceived with gradually increasing accuracy; to sensory stimuli his reactions grow increasingly varied and delicate with these growing powers of discrimination. The process is especially rapid in regard to the things which afford him bodily comfort or with which he plays or which he otherwise puts to use. Instincts like fear and curiosity prompt experimental interpretations of new sensory experiences, but his action in these cases, even when most foolish, has its basis in what he has done previously.

In his own perception the student will readily distinguish the dominant play of purpose. When he is thirsty, the cup of tea has only one aspect—a thing to take in the hand and carry to his mouth. When thirst is quenched, his china-collecting interest may assert itself, and the shape and design of the particular cup may strike his eye. If he wants a certain book from his shelves, to that and that only his eye is directed. He may not even notice that other books surround it. In a casual outward glance, the unfamiliar strikes him, and excites a closer examination, but commonly his interests and purposes determine his perceptions. If he is enthusiastic about birds, every twitter catches his ear as he walks through country

lanes and a new note instantly arrests his attention, whilst his friend the botanist sees nothing but the flowers in the hedge bottom.

What we call *Observation* is precisely this purposeful attention to the things which strike our senses. We do at times give ourselves over to casual and almost meaningless noting of the things that pass before our eyes, as we sit in a railway train for example. But this is not observation in the right sense of the word. If, on the other hand, by force of habit, or by specific intention, we are on the look-out for special features in the changing landscape, geological, historical, or other landmarks, our survey is purposeful; we become observant. Under the influence of a particular interest, our perception becomes remarkably acute. The sailor sees land on the horizon long before the passengers on his ship, and the traditional Red Indian can follow a trail through the woods which would defy the ordinary white man. Popular opinion is apt to ascribe the power of the Red Indian to special acuteness of vision, but recent researches into the psychology of savage races throw considerable doubt upon this view. It seems more probable that experience, quickened by the necessities of the situation, has taught him just what to look for, and how to interpret what he sees. The same explanation is, in all probability, true of the sailor's quickness to see the coast line which may be fraught with danger, or the first sign of the nearness of home.

At the same time, the capacity for sensory discrimina-

tion may be improved by the formal training of graduated exercises. Within certain limits fixed by physiological conditions that vary with every individual, the delicacy of the ear is improved by exercises which necessitate discrimination in the pitch of musical notes. Similarly, the student will find that regular practice will improve his power of 'seeing' distances, or delicately adjusting his muscles to the handling of a billiard cue. But improvement in sensory discrimination goes ahead much faster when we feel that something really depends upon it. In the life of the young child, formal training has usually no place. His sensory development is a product of experience, and of his growing sense of power amongst things which every day acquire new meanings for him. He has no established interests, but the objects about him have for the most part become familiar, in the first instance, as sources of pleasurable sensory activity. He has 'played' with them: then he puts them to use on his own initiative and in original ways. Informally he 'picks up' a great deal of practical knowledge concerning the physical properties of objects. He finds out that some things will break when they fall and others will not, that some things are hard and others soft, that he cannot carry water or milk as he carries a piece of wood, that his father's chair is heavier than his stool, and so on. He is already in the path of learning, but his experiences are disordered, and his actions are almost entirely prompted by momentary circumstances. His development will be marked by

an increasing coherence in his behaviour. His perceptions will come more and more into the service of purpose, gaining thereby in acuteness as well as in richness of content.

It is important to realize how relatively late the power to look at objects in an impersonal way develops. A child in the Kindergarten is interested in objects because of the part they play in his everyday life—not in their shape or colour, or size, nor in their relations one to another. The ordinary child of three or four who looks at a picture still sees the persons and objects upon it *in isolation*. If we ask him to tell us what he saw, we shall learn that there was a man, and a girl, and a horse, and so on. The pictured objects are just representations of things that have entered into his own experiences, and nothing more. At five or six he is curious to know what is going on in the picture—he is interested in other people's doings as well as his own. A year or two later he will observe more particularly the relative position of objects and suggest reasons for things—'the man is sitting down on a stool and looks very tired'—'the sun is just peeping behind the hill and the man is going out to his work'. 'There is a clock by the window on the wall—it says half-past five.' Last of all comes the tendency to notice the details of individual objects—what they are made of, their peculiarities of form, position, &c.

The bearing of this upon the so-called observation lessons in school is clear. Internal factors and felt needs are the springs of successful activity on the part

of the children, and when we talk of training a child's power of observation, we may profitably keep in mind the possibility of cultivating his powers of purposeful action, success in which will depend upon watchfulness and care in the use of his senses. When mistakes in observation really matter, they become relatively infrequent. Many of the school observation lessons are, psychologically considered, nothing more than a formal attempt to associate names to things or to the specific sensory qualities of things. Whether they are justified or not it is not the business of psychology to say.

At the same time, the psychological qualities of a good observer include something more than interest in and knowledge of the subject under examination. Interest in a subject is not infrequently accompanied by preconceptions which may even be strong enough to vitiate the observation altogether. Until Galileo's time, people believed that a stone of ten pounds weight would fall ten times more quickly than a stone of one pound. That was the current belief, and nobody thought of questioning it. Yet the actual fall of stones must have been watched many times in the interval, but it was only with difficulty that Galileo persuaded his contemporaries to look at facts in freedom from the bias of preconception. In a like way, every teacher of science knows how difficult it is to prevent the quite honest ' cooking ' of results which comes when a pupil knows beforehand what he ought to find. Hence to train observation implies also a training in intellectual honesty, and serves to lay the foundation of a love of

truth for its own sake, which enables us to recognize facts whether or not they are in accordance with our preconceived ideas or hopes. To sum up, we may say that an observation which is worth anything will come from one who knows the sort of thing to look for and its probable significance, but who is, at the same time, always prepared for surprises, and ready to accept new interpretations which square better with the facts than those to which he previously pinned his faith.

References for Reading

On perception in general, cp. Angell, *Psychology*, chaps. vi and vii; Mitchell, *Structure and Growth of the Mind*, lectures ix–xii; Stout, *Analytic Psychology*, ii. 1–31, 234–48, *Manual*, Bk. I, ch. ii, §§ 7–10, and Bk. III, Division I, ch. i, Division II, chs. i–vi: Ward's article 'Psychology' in the *Encyclopaedia Britannica*, pp. 564 ff.

On sensations, cp. Angell, op. cit., ch. v; Külpe's *Outlines of Psychology*, Part I, ch. ii; Myers, *Text-book of Experimental Psychology*, chs. ii–viii; Stout, *Manual*, Bk. II; Titchener, *Experimental Psychology* (*Qualitative*), Part I, chs. i–vi, *Outlines of Psychology*, chs. ii–iv; and any text-book of physiology.

CHAPTER XI

IMAGING

If the student will now think of some recent experience—his last meal shall we say—he will probably find that he can conjure up the details of it with very considerable success; that the scene, in fact, lives over again in his mind. The arrangement of the table, the people sitting around, voices in animated conversation, perhaps also the flavour of particularly pleasing dishes, or instead, maybe, the muscular effort involved in masticating a tough piece of meat. Visual, auditory, taste, smell and muscular percepts were all involved in his original experience, and he may have as many kinds of corresponding images now; yet, lively as they are, these images, in comparison with the actual perceptual experiences, are but the shadows of reality. *Imaging*, therefore, is not confined in psychology to the recall of objects of sight, but covers all the departments of sense. Go over again in your mind that particularly effective stroke you made in cricket or lawn-tennis, you have an image of a series of motor sensations, preceded probably by the visual image of the approaching ball, and followed by another image of your discomfited opponent—his exclamation and look of surprise—and here you have motor, visual, and auditory images in combination or in sequence all

serving to make your pleasurable experience live over again. The actual emotional condition, however, is revived, and not as an image ; it is the real thing, and it is because the old emotions tend to come up with the recall of the original experience in image, that the recollection of our personal experiences is so effective in influencing our present conduct. Once you have lost your patience and your temper through having to look after a great deal of luggage when travelling abroad, you are much less likely to err in that way again than if you have simply received a general warning from an experienced traveller.

Although most of us can with an effort image our experiences in terms of more than one sense—we can, that is to say, hear the voices of our friends, see their faces, feel the grip of their hand-shakes, and so on in imagery—it is certain that many people find themselves either by habit or by nature preferentially using one or perhaps two senses as the chief source of their imagery. Nearly everybody can visualize to some extent, though exceptional cases do occur in which the power is completely absent. But visual imagery may vary enormously in its clearness and fullness of sensory detail, from that of the painter who could image his clients so perfectly in the customary chair that he could paint from it, to that of those who can see nothing but most vague forms in which neither colour nor outline is very definite. The same type of differences exists in auditory and other forms of imagery, and it is possible to classify people according

to the particular imagery which is for them at once the clearest and most customary method of reviving old experiences. Although we do find visual, auditory, and motor types, we must remember that most of us do not rely upon one kind of imagery, and that therefore the purely visual or auditory or motor type is very rare. We are, for the most part, of mixed type with a general tendency, perhaps, to favour one sense. This may in part be due to the training of the schools, at any rate so far as the rather special case of verbal imagery is concerned. A person of the pure visual type would naturally recall words in their printed or written form, and if he had to spell them, he might use this mental picture as his copy. Few adults who visualize easily make use of their native tendency for the words of their unspoken thoughts; linguistic power develops before printed words are presented to us, and we continue to rely chiefly on auditory and motor imagery in spite of the school book. Images of sound and movement frequently guide the voice in speech and the hand in writing, though in writing the visual image may play its part as critic of the finished product —e.g. a good visualizer may correct his spelling in this way.

Adults vary greatly in the extent, type, and vividness of their imagery; indeed, the same person will find his imagery varying in these respects with the need of the moment or the condition of his health. Most people have experienced the slightly feverish condition in which their images have become so startlingly realistic

that only a strong effort of attention has enabled them to decide for their unsubstantiality. At such times, as also in the fantastic combinations of our dreams, we notice the novelty and independence of actual experience which characterizes the play of fancy. The adult has usually no difficulty in deciding, at any rate after the event, that it was during sleep or fever that he 'imagined' these queer things, but a child is much less able to distinguish clearly between the real world and the imaginary. (Some children are remarkably unstable in this way, and romance with an air of conviction which often misleads the unwary. Experience rapidly corrects tendencies of this kind as a rule, though under the emotional excitement caused by foolish stories boys will occasionally set out upon extraordinary schemes of adventure, as if they were for the time quite unaware of the facts of the world about them.) But, of course, the power of combining our images in new forms, which is called Imagination, is not confined to the irresponsible conditions of sleep and fever and juvenile excitement. Within limits we can all build castles in the air to suit our momentary needs and moods.[1]

Very young infants probably image very little. Their interests are confined to the things and persons around them at the moment and to their own organic condition. The hungry infant cries with discomfort, but without knowing or even imaging what he wants. Under what

[1] Cp. p. 228 on purely fanciful courses of imagery, and pp. 229 ff. on more serious imaginative construction.

conditions does he begin to image objects? If his needs were always satisfied the moment they arose, he would perhaps never have images at all, but fortunately for him he often has to wait. Now the sight of his bottle and his mother, perhaps, constantly form part of the total experience in which his increasing hunger is satisfied, and by and by he begins to look around for them when he is hungry and they are not there. Other people may try to comfort his fretfulness with other things, but only when the right person arrives with the right thing does he become contented. Or again, supposing his food has been brought and is then for some reason removed; you may notice how (if he is now some five or six months old) his eyes follow it and still gaze at the door through which it has been taken away. It seems probable that images first arise in such situations of what in ourselves we should call expectation defeated or unfulfilled.

As we shall see, it is under much the same conditions that thinking begins.[1] But it is probable that for a good many years imagery is much more dominant in the child's mind than in ours. Words tend to recall his own experiences in image independently of their context, and when we think he is following us, he is liable to stop at casual halting-places whilst his attention rests upon a particularly attractive picture of the past called up by something we have said. A little introspection will convince the student that images play a much less important part in his thinking. Words

[1] Cp. pp. 185, 215, 222.

have taken their place, and the words themselves have lost most of their attendant imagery; the more scientific and abstract his topic, the less prominent are images, which indeed by their very particularity would be a hindrance to his progress. This difference between the adult and the child may help to account for the fact that so many men who have great and even distinguished knowledge of a subject fail completely when they try to impart it to young beginners. The teacher who can himself image clearly when he wishes will often find in doing so a key to the minds of the children whom he has to instruct.

By means of well-chosen words the teacher can in some degree control a child's images. He tells a story, perhaps, which, though not taken from the child's experiences, yet makes use of the child's experience to enable him to get outside it. The details of the story must be familiar, but they are selected and arranged in a way that is new. (The child has never seen a glass slipper, but has often seen slippers and glass, and can combine his images as the story demands.) So the story appeals to him in proportion as he can convert it into an imaginary experience.

An instance of the force of imagery in this connexion is familiar enough to all teachers of young children. If the children are not unduly repressed, interruptions in which a child offers this or that more or less relevant observation frequently occur. You are talking about dogs; 'Please, sir, our dog bit the postman yesterday', or 'Please, teacher, our dog has puppies'. This sort of

exclamatory irrelevance grows less frequent as children grow older, not merely because they have gained in self-control or in the power to follow their teacher, but because the words have lost much of the attendant imagery which belongs to them in early life.

References for Reading

James, *Principles*, ch. xviii; Myers, *Text-book of Experimental Psychology* (2nd ed.), pp. 136–42; Royce, *Outlines*, ch. vi; Stout, *Groundwork of Psychology*, ch. x; Seashore, *Elementary Experiments in Psychology*, chaps. i and ix.

CHAPTER XII

CONCEPTION

§ 1. What is meant by 'Conception'. An old man is digging in a garden. He digs up a worm, picks it up, and mechanically throws it aside. Near him is a robin, who pounces on the worm which has been cast away. You may suppose the gardener's behaviour and the robin's to be very much alike in character; and in the particular instance they may be not very dissimilar, for the gardener may act without thinking, as soon as he sees a worm. But the gardener knows some reason for what he does. He may not have been thinking of it at the moment, but if you inquire, he will say, perhaps, 'Did I throw a worm out? Well, it was because they would eat the roots of my young cabbages.' The bird does not think about worms: it pecks at them unreflectingly. Experience has taught it that worms are worth pecking at, and bits of stick or straw are not; but it has no views or beliefs about them. The man has beliefs. He can not only perceive a worm and act on what he sees, but he can think about worms in general, even when he does not see them, and act upon what he believes. If he believes, as we have supposed, that worms are injurious, he will act in one way; if he thinks this belief to be a silly superstition, he will act differently. In the one case he is said to affirm, in the

other to deny that worms are injurious, and the technical name for the mental operation involved in affirmation and denial is Judging or Judgement.

Instead of judging that worms are or are not injurious, our gardener might ask whether they are, or might say to himself, 'Suppose they are, what is the best way of dealing with them?' Questioning and supposing are also ways of thinking, but he could not question or suppose unless he could already judge: judging is the most fundamental and most important way of thinking. Whether he judges, however, or questions, or makes a supposition, in any case it is about worms in general —the common nature of worms—that he thinks. He can perceive only this particular worm or this particular group of worms as they are at the moment that he sees them; but in thinking he liberates himself from the details of the moment, and has for his object, not this particular thing as it is here and now, but what is called a universal object. All thinking involves such apprehension of universals, and (the cognition of a universal as distinguished from the particulars which it unifies) is called Conception or Conceiving.

Even in percepts there is a universal element present. Owing to its past experience, worms are now familiar to the bird, so that it recognizes one when it sees it, and reacts the more quickly: and they are familiar because they are alike—i.e. have a common nature in spite of their individual differences, though the bird cannot

[1] Baldwin's *Dictionary of Philosophy and Psychology*, article 'Conception'.

attend to and think about this common nature by itself. Our perception is generally modified by the fact that we can think: we recognize what we perceive as a tree or a bird or a person—in short, as one of a kind—and can name it: we say 'I see a bird', or 'I heard a noise'. This may be called conceptual perception, because we make the universal element in our percepts more explicit by naming it; but we can name things without necessarily thinking about their universal nature by itself. My eye at this moment catches sight of an object which I recognize and call a postage-stamp. The name which I give to it implies that it is one of an indefinite number of objects which, however much they may differ in appearance, and whatever part of the world they may come from, fulfil a common function in our social life. I need not be thinking about this common function, but I can if I will; if I do, I conceive it, and it is my concept—a universal character, common to all particular postage-stamps.

But, you may say, I can think not only about birds or trees or postage-stamps in general; I can equally well think about individual objects. This postage-stamp, for example—I can wonder why it is triangular and judge that it is foreign and many years old. That is so: we can think not only about kinds and their common character, but also about individual things and persons. Indeed, we shall find that the first objects of the child's first attempts at conception are probably individuals. What is not so obvious, perhaps, is that these individual concepts are also universals.

Yet when I think about *this* postage-stamp, it is not simply the object of a moment's vision that I think about; I conceive it as a thing having a history: it was made so many years ago, was posted and travelled, and now is exhibited in an album, and yet is one identical thing through all its changes. When I think about postage-stamps in general, I conceive the common character which is identical in all of them that are or have been or will be; when I think of this postage-stamp, I conceive it as being an identical thing as long as it exists as a postage-stamp. In both cases I think of what goes beyond the moment and is universal. Sometimes the persistent identity of an individual is so important that it has a proper name. You do not think of your dog merely as 'dog', nor are you content to call him 'my dog': you name him 'Carlo'. Think again what a wealth of meaning there is for any one in the words 'my mother'. You may think of her in so many circumstances, occupied in so many ways, tending you with encouragement or reproof or consolation, and yet one identical person throughout. All thinking therefore involves conception, and even individual concepts are universals.

There are indeed important differences between individual concepts and other universals, but for a treatment of them the reader is referred to works upon Logic. Nor is there any need to attempt here a list of the various kinds of concepts. It may be worth while to point out, however, that one's dog, for example, not only has those characters which are common to all

dogs and make him a dog and not (say) a cat, but is also (let us suppose) big, black, affectionate, and trustworthy, came from such and such a place, and is now just three years old. He has in fact an indefinite number of qualities, and stands in an indefinite number of relations to other things ; and he is a unique object because he alone has just this union of qualities and stands in just these relations. Now we can think about these qualities in him and his relations—his blackness, his age and the rest : or we can think about blackness or colour, or affection or goodness, or age or time, and so on, in general. All these objects of thought, then, are concepts.

Some writers have laid great emphasis on the fact that the most prominent element in many of our general concepts is the practical use that we should make of things, or the practical attitude that we should adopt towards them. A knife is ' a thing to cut with ', a spoon ' a thing to eat with ', a chair ' a thing to sit upon ', a house ' a thing to live in '. Children and uneducated people are apt to define most things by their practical use, and not only such instruments and contrivances as a spoon or a chair, just as all of us who are not zoologists think of a horse primarily as a creature to ride or drive, because it is the use of the horse to us that interests us, and not its zoological characters and relationships. But we must not exaggerate the importance of such ' practical ' meaning. It is true, of course, that your knowledge of a tiger is very inadequate if ' you believe that when you meet one

you pat him on the head and ask him to give you his paw'; but it would be quite as inadequate if you thought of him simply as a powerful beast to be avoided; and in many of our concepts—e.g. psychology, poetry, religion, possibility, society, policy—the 'practical' element, if not altogether absent, is at least subordinate.[1]

§ 2. **The Development of Conception.** (The child passes from the perceptual to the conceptual stage of intelligence by a gradual development,) and so we must not suppose that when it begins to think, it thinks just as we do, any more than when it begins to speak, it can speak just as we do. (Its first thoughts will be only a little advance upon perception,) and we who have forgotten that transitional period can hardly hope to know what it is like. Nor can we tell exactly when the child begins to think. In the chapters on Infancy and on Language was described how he learns to use words, and words are for us the socially accepted signs of thoughts. We may, therefore, learn something from the child's use of words, at any rate if we attend to the tone of his voice and his general attitude in using them. (For his first true words (as distinct from earlier noises of emotional excitement) are got by imitation: they are simply imitative reactions on the sight of particular things in particular settings—percept-words, we have called them—involving recognition of a kind, no doubt, but not yet anything that deserves to be

[1] Cp. the references to Calkins and Royce at the end of this chapter.

called judgement. Sometimes, too, when we might be inclined to fancy that the child is judging, he is merely showing off. Yet probably he begins to judge in some poor way sooner than we often suppose. Before he has got to putting words together ('Tummled baby' on a fall, 'Bing shut' when the door is closed, or the like), we sometimes notice an affirmative tone in his use of names of familiar objects or persons—'tic-tac' of the nursery clock, 'mama', 'dada'—a tone which seems to correspond to ours when we say 'There is So-and-so'. Like us, the child adopts this tone when he recognizes under difficulties—when the clock is out of its usual position, or his mother has on a different hat; and it seems to indicate an elementary affirmation that this is the same thing or the same person in spite of its differences. Conception is here still inbound with perception; but soon the child, faced by other troublesome situations, begins to notice that his mother has gone and to anticipate her return, thus evidently passing away from perception to thought.

The first objects at all clearly conceived are individual persons and things. But conceiving one thing clearly involves distinguishing it from others, and there is a previous stage in which the child's tendency is, perhaps, more evidently to note similarities than to make distinctions. A child of eighteen months calls his father's match-box a 'tic-tac', because both watch and match-box are drawn from the waistcoat-pocket. Earlier than that he has called other timepieces besides the nursery clock by that name, and earlier still he has

called all friendly men 'dada'. The fact is that conceptions both of individuals and of kinds of things and their common nature develop out of the same stage of vague, indefinite apprehension, which is a little more than bare perception, and a good deal less than thought. Individual concepts become clear first: the child thinks about the nursery clock before he thinks about clocks; but he can recognize clocks and give them a common name before he can think about the nursery clock. The common name is called forth by some common perceptual feature, and not by any cognition of a universal apart from the perceptual experiences which it unifies. He recognizes similar qualities in different objects of perception, but does not yet think of them as similar. Yet this recognition of them already involves a rudimentary form of that mental analysis and synthesis which will afterwards become deliberate comparison: attention is concentrated on this or that feature of a percept (say the look of a clock's dial) which is thus analysed, and by the recognition of a similar feature in another clock the new experience is (though vaguely) united to the old.

So the percept-word 'tic-tac' is soon applied to many clocks besides the nursery clock because of some similarity in appearance. Then the child's attention may be directed to the sound, and he learns to call his father's watch by the same name. But his course is tortuous, for he may, as we saw, call a pocket-match-box 'tic-tac', until the difference is pointed out to him; and at first the difference insisted on is just the differ-

ence of name, for he would not understand if we said that one tells us the time and the other holds matches. (Many early distinctions are forced on the child at first as differences of names. He calls a hen 'quack-quack', only to be pulled up by his nurse: 'No, baby, not a "quack-quack"—a "chuck-chuck"'—and thus he is induced to notice other differences. Helped by words, a young child learns with astonishing rapidity to distinguish kittens from puppies, cocks from hens, girls from boys, in real life or in his picture-books).[1] So far—to return to clocks—the child has not begun to think about clocks and watches in general, and when he does, they probably are to him curious-looking things that he expects to see on any mantelpiece or find in any waistcoat-pocket. He is still far from any notion of time, and it is not till months after he has grasped the meaning of 'Yesterday' and 'To-morrow' that he learns to use a clock himself, though he gradually discovers that it tells others when dinner is ready or it is what they call his bed-time. By now he speaks of a clock, has seen clocks wound up and has peeped into their works. Moreover, he has toys that move when they are wound up; he hears them called clock-work toys, and anyhow he probably notices a likeness between winding them and winding the clock. So another move forward is possible, that may not be completed for years, but ends in his understanding the connexion—the tightly wound spring as the driving force common to clock and watch and toy.

[1] Cp. p. 57.

Each step in his progress has been marked by a new discovery about the nature of the object itself, the result of a deeper analysis, which has been prompted now by his own curiosity, now by the directions of others, and now by casual experiences; and each deeper analysis has led to wider synthesis, so that his concept is richer and fuller than before, since he has brought the clock into new relationships,—first with the watch, then perhaps with watch and sundial as timekeepers, then with watch and toys as mechanisms.

He may go further. The tall clock in the hall has no springs, but weights, and this is a puzzle which incites to new analysis. The tall clock stops when these weights reach the ground just as little clocks stop when the spring is slack. Thus he is led to think of and inquire about other ways in which driving power may be obtained and used; and so—much later, probably—he learns to think of energy in general, and with that thought gets a new view of the water stored in the dams, the steam in the engine-boiler, the tides, the sun itself. Again a new synthesis follows on deeper analysis. It will be noted in this example how dependent the development of conceptual knowledge is upon actual acquaintance with particular clocks and watches and toys and the rest. When a child begins to think about any kind of thing, his concepts are necessarily coloured by the specimens that he has met. If he has been acquainted only with small dogs, his concept 'dog' will be different from that of another boy who has seen large dogs as well; if he has romped with dogs,

it will be different from that of a boy who has been taught to be too cautious. Words are deceiving: the child learns words before he learns their accepted sense. He may recognize all the ships in his books, and talk and think about them, and yet know practically nothing about real ships, if he has never seen one. Of course his thoughts do not depend wholly on what he has himself perceived, for directly and indirectly he picks up information from others; but if we go far ahead of his life's experience, our words have no meaning for him, or have a meaning very unlike to what we intend. Children's facility in picking up words is a common pitfall for the unwary teacher who ignores the slow growth of thought and mistakes the apt use of words for real knowledge.

This personal colouring adheres more or less to the thoughts of all of us, and so to the values of the words we use. The fact that two persons use the same word does not necessarily imply that their thought is wholly identical, though it must be partially so if they are to converse at all. Many controversies have arisen from the disputants' failure to discover the precise sense in which the same words are used on either side, and have lapsed when this has been discovered.[1] It is a good rule in discussion, as in scientific exposition, to begin by saying explicitly what the more important of the terms to be used mean, even though their meaning may subsequently need to be revised; but for a full

[1] The recent 'blackboard controversy' could hardly have arisen if the disputants had meant the same thing.

treatment of this matter we must again refer to the text-books on Logic and their account of logical definition. In ordinary life we are generally satisfied with an approximation towards identity in our thoughts and use of words ; we classify our meaning and rid it of personal colouring just so far as the need for intercourse and communication with other people compels us to do so. The fisherman and the fishmonger and the cook do not all think of fish in just the same way, but nearly enough in the same way to be able to understand and deal with one another, though none of them knows the zoologist's definition of ' fish '.

But our thoughts do not merely depend upon our perceptual experience ; they also react upon it. We have already seen how they give meaning to our percepts which are now conceptually recognized ; but, more than this, they guide our observation, and so enable us to notice much that we should otherwise have neglected.[1] The botanist and the geologist and the artist each see much that the other misses in the same country scene ; and even to Peter Bell ' a primrose by the river's brim ' will be more than merely a yellow primrose, if you can get him to pull it to pieces under your direction and to compare its parts with those of other common flowers, and so to become interested in and think about floral structure. He will then be able to note many differences, previously neglected, between similar-looking flowers, such as buttercup and silverweed, and many common charac-

[1] Cp. pp. 167 ff.

ters in others, such as honeysuckle and elder, which are closely related in spite of their different appearance.

Similarly an engineer, because he can find order and meaning in what is a mere medley of moving parts to the man without knowledge of machines, is better able to guide his observation in a laboratory or workshop. His knowledge teaches him what to look for, and how and where to look for it.

References for Reading

Cp. Angell, *Psychology*, ch. x; Calkins, *Introduction to Psychology*, ch. xvii; Mitchell, *Structure of Growth of the Mind*, lecture xiii; Ribot, *Evolution of General Ideas*; Royce, *Outlines*, pp. 285–90; Stout, *Analytic Psychology*, vol. II, ch. ix; *Manual*, Bk. IV, chaps. iv and v; *Groundwork of Psychology*, ch. xii; article 'Conception' in Baldwin's *Dictionary*.

CHAPTER XIII

'WILD RANGING OF THE MIND'

In the chapter on Infancy emphasis was laid on the way in which a child's experiences become so linked together that he learns to expect or himself to act out the rest of a series when the earlier stages of it are repeated. A parent says to him 'Lie down', and he lies down; 'Gee-gee, baby', and he looks towards the window, and so on. The words are the initial elements in a series which has been so frequently experienced that their recurrence now moves him to a fresh realization of the whole of which they formed a part. These 'dispositions' have been established in his mind owing to his previous experience, and their establishment is an instance of the same psychological principle that was discussed in the section on Habit. In this form it is called the principle of Association, according to which the mind tends to proceed from a present experience which is partially identical with an old one to perceiving or imaging or thinking of or actively realizing a new whole resembling the old, in so far at any rate as the old was interesting.

The same principle is exemplified when a child for the first time in a train 'sees the trees moving', because they seem to travel past him in the same way as horses and other objects pass his window at home, and in

other perceptual illusions, and indeed in all perception. It is also exemplified in the course or 'train' of our images and thoughts. For their course depends, at any rate in part, on past experience, and so far follows the principle of habit—from part to whole.[1] When we are engaged on a practical occupation or in rational thinking, this tendency to pure habit is modified and obscured by our purpose; in the middle of a tennis-match, if we are keen to win, or in the middle of a mathematical theorem, if we are keen to solve it, our thoughts do not wander but are all relevant to our purpose.[2] Yet, as everybody knows, we often find it difficult to carry a serious purpose through just because irrelevant images or thoughts crowd in upon us against our will.

It is, however, when purposive activity is at a minimum that purely associative connexions of our images and thoughts are most obvious, e.g. in some idle reverie, when thoughts seem to 'come into our heads' quite casually, often following one another with lightning rapidity, or in the astonishing sequences of our dreams. As Hobbes put it, 'in this wild ranging of the mind, a man may oft-times perceive the way of it and the dependence of one thought upon another. For in a discourse of our present Civil War, what could have seemed more impertinent than to ask (as one did)

[1] Even when we restrict the term 'Habit' to sequences of movements, it is such a passage from part to whole. The initial terms of an associated series set up a tendency to completion of the whole series.

[2] Cp. ch. xv, § 1.

what was the value of a Roman Penny? Yet the coherence to me was manifest enough. For this thought of the war introduced the thought of the delivering up of the King to his enemies; the thought of that brought in the thought of the delivering of Christ; and that again the thought of the thirty pence, which was the price of that treason; and thence easily followed that malicious question; and all this in a moment of time, for thought is quick.'

Hobbes describes a kind of behaviour which must be familiar to every one. In any case, let the student try a simple experiment upon himself. Starting with a certain word, 'paper' shall we say, let him allow his mind to range wildly for a brief moment, putting down afterwards the course it took. I get, for example:—

Paper, rags, poverty, wealth, taxes, rates, town hall, mayor.

Of course every person who starts from this same point will usually follow a course very different from that of others, but each will probably be able to give an account of the particular manner of his own. Why, for example, did my mind pass from paper to rags? I had an hour ago been examining a piece of paper said to be made from rags. The recency of this experience accounted for the tendency to persevere in what may perhaps seem a rather unusual course. From rags to poverty is a more common transition, because our experience has frequently brought the thought of them together into consciousness. So in nearly all cases we find that in passing from one thought or image to

another, our minds are simply pursuing an old path—one recently formed, perhaps, or one which has been worn deep into our mind's structure by the frequency with which we have gone over it. The pedagogic maxim, *Répétez sans cesse*, is a standard application of this law of frequency, a law which has within it the secret of successful advertising. We are in need of soap, or cocoa, or tea, and, having read of So-and-so's many times a day, the tendency to ask for it is so strong in most of us that it is worth the manufacturer's while to go to great expense in advertising.

It sometimes happens also that an experience is so intense and vivid that a recurrence of any of the attendant circumstances is sufficient in the future to recall it: whenever we see such and such a person or hear his name, whenever we are in such and such a neighbourhood or in a district at all like it, the revival takes place. With the lapse of time, the tendency may become less active, depending, of course, upon the relative intensity and interest of the original experience, and the frequency of subsequent revivals. If we meet an old schoolmaster occasionally, the sight of him may always remind us of the thrashing he once gave us, but if we meet him often, the newer experiences may easily link themselves so strongly with his appearance that the thought of the impressive punishment we received at his hands is rarely aroused.

This tendency of the mind to pursue old paths is commonly known as Association by Contiguity. When the thought (image, or percept) of the moment has

played a part in many previous experiences, it is not of course possible to forecast which particular line our minds will follow now; everything depends upon the end towards which we are working. In the absence of well-marked purpose, the frequency, recency, or vivid interest of the original experiences will determine the present event.

It sometimes happens, however, that we cannot apparently explain the actual association in this way. A new acquaintance, we say, recalls an old friend, an unusually tall man reminds us of a very diminutive acquaintance. It is customary to class these and the like occurrences as Association by Similarity or Contrast. But in Association by Similarity, the actual sequence of thoughts takes place first, and the similarity between the objects is noticed afterwards. The thought of our friend comes to us as we look at the man across the room, then we remark upon the likeness. So in 'Association by Similarity'[1] the old path is followed no less than when we see a man across the road and his name occurs to us. The face of the man across the room is just sufficiently like that of our friend to lead us, at least partially, in the same direction as if it were actually he. And so with all cases of so-called Association by Similarity; they, too, only furnish fresh illustration of the principle of Habit. That is to say, Association by Similarity is not different in kind from Association by Contiguity. In like fashion

[1] Cp. Stout, *Groundwork of Psychology*, p. 123. Stout would call this Association of Similars—a more correct term.

we find that Association by Contrast falls into the same general scheme, whereby the partial recurrence of an old experience leads to thought of the whole. The very tall man recalls the short man, because both are instances of extremes in stature.

We live so much in the atmosphere of words that a special note should be made concerning verbal associations. It is necessary because we are naturally apt to suppose that words and phrases must have a definite meaning for the person who uses them. But children are particularly quick to catch phrases, and indeed whole sentences, and to reproduce them in answers to questions without understanding them, thereby misleading the unwary. The less native ability the child has, the more likely is it that his words outrun his knowledge. In the clever boy's mind words tend to revive images or thought of actual things rather than other words, and if he wants words, he struggles to make them fit his ideas. The duller child is satisfied with the words themselves. His imagery is less lively, his thought is superficial, though his fluency carries him along. Of course training of the right kind helps to correct this superficiality.

Children are less able than adults to prevent their thoughts from ranging, except perhaps when they are doing things with their hands. Their interest in purely intellectual exercises is not generally very great, and all kinds of casual associations distract them. The younger the child, the less connectedly he thinks and writes. A young schoolboy's letters pass from one

subject to another and back again to an earlier topic in butterfly fashion. So do the thought and speech of uneducated and ill-disciplined minds at any age; but in a well-trained mind the sequence of ideas is not determined solely according to the principle of Association. We ourselves determine the general course of our thoughts, and the stronger the present conation, the less likely are irrelevant associations to occur.

Individuals of course vary greatly in the richness and variety of their associations. This depends in part on the richness and variety of their experiences, and partly on the range of their interests. The same person, too, at different times, if he allows his mind to 'wander at will', must find extraordinarily different results. Our mood at the moment has a great influence on the course of wandering thoughts. When we are melancholy, for instance, thought moves in the saddest channels; yet the same circumstances which now call up most dismal pictures of the possibilities of the future, at another time serve only to remind us that difficulties are here to be overcome.

References for Reading

Hobbes, *Leviathan*, Part I, ch. iii; James, *Principles*, ch. xiv; Stout, *Analytic Psychology*, Bk. II, chaps. iv and vi; *Manual*, Bk. IV, ch. ii; *Groundwork of Psychology*, ch. xi; Ward's article in the *Encyclopaedia Britannica*, pp. 573 ff.

CHAPTER XIV

MEMORY

THE student is already familiar with that mental retentiveness which, as we have seen, is exemplified in every kind of 'disposition' and is involved in the simplest act of perception. We are always living on our past accomplishments, whether we realize the fact or not. You are reading this book without any thought of the weary hours spent in early childhood upon learning the art; you get up and go for a walk—when and how did you acquire this freedom of action?

For the most part, then, we take the past in this way for granted; sometimes, if we think of it at all, we think it was wasted, because we cannot recall its details and do not recognize its present effectiveness. A business man looking back upon his schooldays frequently condemns them thus: he says he has forgotten all the useless lumber he learned, and what he does remember of those times has no connexion with his studies. But he is probably unfair, though not intentionally. Even though the details of his geography and history lessons have gone, there are probably left behind attitudes of mind towards the world in general and his country in particular which insensibly affect his conduct now. After all, how much of the detail

of his business life does he remember for a single year? Is it desirable that the details should remain separately recoverable? Is it not better that they should merge into general business capacity? The experiences that he can recall are exceptions: the rule is that past experiences give rise to dispositions which influence subsequent behaviour, but their details are irrecoverable under normal conditions. Memory is therefore selective. Can we discover any principles that underlie the selection?

We must notice in the first place that memory may be more or less complete. It is most complete when we can recall a past experience in considerable detail, recognize it as our own, and give it its proper position in our personal history. But we may remember our visit to a certain place without being able to image the scene distinctly: or we may have a clear image of the view and forget the details of our own movements—where we stayed, where we fed, and the like; we may remember having seen a certain person, but not remember where and when; and, more especially, we may remember facts that we have learned without any memory of the personal experiences that went to the learning of them, as is the case with most of the 'information' that we possess.

What, then, are the conditions that favour memory, more or less complete? It will occur to the student at once that the relative ease with which he remembers is partly dependent on lapse of time. More recent experiences and facts more recently learned are normally

more easily recalled than those of older date. We can recall our doings of yesterday better than those of a week ago, and put them more nearly in their right order ; as a rule, it is only by indirect means that we can discover what we were doing on a particular day two or three months ago.

Yet very likely we cannot remember putting on our boots yesterday morning, though that is not long ago, and we certainly wore them. If a lace broke when we were in a hurry, however, we might remember then. Purely routine doings are often forgotten almost immediately, whilst anything that has impressed us deeply, stirred our emotions, or appealed strongly to our interests—in a word, anything that has been keenly attended to—may be long remembered.

But this is not the whole of the matter. A doctor attending a prolonged case of illness may remember the details of his patient's health with great accuracy so long as it is necessary that he should do so ; but when the patient has gone away or is dead, he will very likely forget the case altogether, or will remember only its general bearings on the treatment of disease. Similarly with the barrister who gets up a cause, and (too often) with the student cramming for an examination, who six months after it is over would be most unwilling to submit himself to the same ordeal again. Even what received attention at the time, then, is not generally remembered when the need for it and interest in it have passed. But often it may be not exactly remembered, but re-learned very rapidly if the need

recurs: thus many persons forget the principles of different games of cards if they do not play for a few months, but when they start playing again, the rules 'come back to them' and their old skill is revived in the course of a couple of deals.

Putting these points together we see that what is best remembered is what interested us at the time, is relevant to our present interests, and either was recently experienced or learned, or, we must add, has been frequently called to mind in the interval—for frequent reminiscence gives a kind of recency to experiences which happened long ago. In a word we remember best whatever was and is still thought by us to have an important bearing on our permanent interests. There are exceptions, of course, that do not fall precisely into this scheme. I have no particular use for the fact that Mont Blanc is 15,732 feet high, yet I shall probably always remember it, simply because I had to repeat the statement so often in my childhood. Most people remember odd fragments of their early experiences, which have no direct interest for them now but impressed them vividly at the time. In old age memory often fails for recent events sooner than for those of boyhood and early manhood. In fever and in certain kinds of mental disease memory may be heightened or diminished in a variety of freakish ways. But for normal persons in the main the principle holds good.[1]

[1] The teacher should notice that fatigue is doubly injurious to memory. We do not subsequently remember well what we

To remember, then, is not merely to recall, but to recollect. Now when we want to recollect anything, we naturally try to find some cue. Where, for example, can I have left my umbrella? Did I take it out with me this morning? What places did I call at? When had I to use my hands so that I must have put it down? Thus I go on until I picture myself in a particular shop, and the thought flashes upon me—Yes, I remember putting it on the counter when . . . A procedure of this kind does not invariably prove successful, but it is the sort of procedure that we all follow in such circumstances, whether we are psychologists or not. We try to think of other parts of an experience which included carrying an umbrella, in the hope that from thinking of them we may be able to recollect the part that we have forgotten. We make use, therefore, of the principle of association; only association does not now lead to ranging, purposeless thoughts, but is restricted by our present purpose.

The student should, however, notice that whilst recall of the past is in accordance with the laws of association, not all cases of association are cases of memory. The sheet of note-paper on the other side of my table reminds me that I promised to write a letter. Here clearly there is explicit revival brought about by the established link between note-paper and the act of letter-writing, but at another time a sheet of note-

learned when tired, because attention was then at its minimum; we do not when tired remember well what we have previously learned, because attention is now at its minimum.

paper in the same place may suggest untidiness, and I forthwith put it into the drawer. Obviously the sequence of ideas and action, in this case also, is the result of experience, but there is no explicit revival of the past. Memory is not involved, though the general retentiveness of mind is.

Individuals differ very greatly in respect of memory. Different men remember different kinds of things, and this depends primarily, as we have seen, upon their special interests, or their acquired needs. A grocer remembers the fluctuations in the prices of flour more easily than similar changes in the price of pig iron. A boy will recall with great accuracy the results of all the football matches of the season, though he cannot remember a single date in History. Another finds mathematical formulae very easy to commit to memory, though he learns poetry by heart with great difficulty. Differences in power of memory are often largely accounted for by differences in what interests us, and the problem of memory-training resolves itself in most cases into one of establishing the right kind of interest. The teacher who can make lessons appeal to his boys as football appeals to them will find less difficulty arising from lapses of memory than a routine teacher finds.

There are, however, differences in power of memory which the presence or absence of a particular felt necessity does not account for. Two students are equally anxious to pass a particular examination; one is successful and the other is not. Apart from

ordinary examination-vagaries, this may be due to special weakness in the retentive powers of the one as compared with the other, or it may be due to the use of less intelligent methods of work. The weaker student may have failed because he lacked capacity to distinguish the important from the trivial. He gave equal attention to all the details with which his books were filled, and failed to see their relations one to another. He tried to remember everything to the utter confusion of his mind. His answers were full of irrelevancies. It was clear to his examiner that he did not understand. Failure of this kind is not necessarily due to native deficiency in retentiveness, but to higher conceptual weakness. Not by conning details singly, but rather by reducing them to system in which general principles are clearly distinguished shall we make the best use of our powers of memory. When we have got a grip of the great principles and the real issues, we may trust to the details being forthcoming when they are needed.

Are there, then, no native differences in Retentiveness pure and simple? A series of classical experiments by the German psychologist, Ebbinghaus, showed that these differences do exist, and that they are measurable. It is a commonplace of ordinary experience that one person learns poetry more quickly than another, and remembers it longer, but this may be due to differences in attitude towards the subject-matter. To the one it appeals strongly, to the other it does not. In order to avoid complications of this kind, Ebbinghaus suggested

the use of nonsense syllables as material for testing memory. Leaving aside for our purposes the technique of these experiments, we may suppose that it requires in one case twenty repetitions in order to enable the subject to repeat accurately and without hesitation a series of twelve such syllables, in another case it requires twenty-five repetitions. Supposing that each person has given an equally undisturbed mind to the task, clearly we have a difference in power of committing to memory which can be expressed in figures. But now, after a week, the two subjects are brought back. Neither can repeat his series, and *A* requires ten new repetitions to recover it, whilst *B* only needs five. Here a difference in power of retention is revealed which is also capable of numerical statement. This gives, it is claimed, a method by which individual native differences in power of memory can be determined. Everything depends upon the complete absence of rational suggestions in the syllables chosen, and upon complete concentration upon the task set.

This method has been used to investigate the question whether or not children's power of memory is better than that of adults. Results suggest that children acquire such series with greater difficulty—that is to say, they require to repeat them more frequently—than do adults, but once acquired the series are less quickly forgotten. It is obvious, however, that differences in power of concentration must at least partially account for the difference in ease of acquisition.

Although we are not ordinarily required to establish series of nonsense syllables in our memories, there are many more or less meaningless series of words which it is necessary to know perfectly. There must be no hesitation in our knowledge of arithmetical tables, of grammatical paradigms, of mathematical formulae. They must be learned by heart. Such learning depends primarily upon repetition, for as in the case of acquiring any other dexterity, it is a question of fixing a habit. But habits are acquired most rapidly when the mind of the person concerned is set in that direction. If a schoolboy does not really care whether he knows French verbs or not, it will require many more painful repetitions to fix them than it would otherwise. The problem of setting up interests and motives is one which teachers must solve each in his own way; it is for us to point out their relation to successful activity.

Considerable attention has been given in recent years to the problem of the most economical method of learning by heart, and, incidentally thereto, to the question of whether memory can be trained. Thus, if we are concerned to learn 'The Wreck of the Hesperus' by heart, is it better to do it verse by verse or to learn it as a whole? It has been established by actual experiment upon children and upon adults that the latter method is the better one. To learn the first verse by repeating it over and over again establishes a link between the last words of the fourth line and the first words of the first line, which has of course to be broken down when the second verse comes to be

tacked on to the first, and so on right through the poem. Moreover, the 'whole-method' has the great advantage of keeping the completed thought or picture steadily before the mind. It is grasped first in vague outline, and gradually, with repetition, details take their right place in the scheme.

Experiment seems also to show that memory in the sense of native power of retention does not improve with practice, but the methods of memorizing do. As pointed out in an earlier paragraph, intelligent grasp of that which is to be remembered is the first essential, alike to rapid acquisition and to effective use. The real test of memory lies, of course, in readiness, aptness, and accuracy of recall. When that which is to be remembered is capable of logical arrangement, it is most economical to pay chief attention to accomplishing this, rather than to apply the chief effort to committing details to memory. The more numerous links we can make between our present knowledge and that which we are concerned to acquire, the more likely it is that we shall remember it effectively. We want as many avenues to the new as possible, thereby increasing the chances of getting at it in the future.

Similarly, repetition in as varied a form as possible is commonly of great assistance. Writing notes is one especially valuable form of repetition. The teacher who writes a formula or a rule upon the blackboard makes a contributory visual impression upon his pupils, which is helpful. Again, individuals will vary in the manner of their committing to memory. A

visile will remember best what he sees in script or in print, an audile what he hears spoken or read aloud, and one of motor type will find it necessary to write the things he wishes to remember. It follows, of course, from what has been said before, that concentrated attention is the first condition alike for rapid acquisition and for accurate recall.

References for Reading

Angell, *Psychology*, ch. ix; James, *Principles*, ch. xvi; Myers, *Text-book of Experimental Psychology*, pp. 164–71; Stout, *Manual*, Bk. IV, ch. iii. A useful list of important papers (in English) in various periodicals will be found in Mellone and Drummond, *Elements*, pp. 364–5. For instructive cases of disorders of memory cp. Ribot, *Diseases of Memory*; Störring, *Mental Pathology in its Relation to Normal Psychology*, lectures xii–xvi.

CHAPTER XV

THOUGHT AND IMAGINATION

§ 1. **Purpose and Relevance.** As was indicated in the last chapter but one, the 'wild ranging of the mind' which we were then considering is unintelligent and almost automatic behaviour, and is as little to be confused with intelligent thought and imagination as are, let us say, habitual tricks of gesture with deliberate voluntary action. Intelligent thought and imagination are indeed kinds of voluntary behaviour, and therefore, though they make use of past experience, they are not dominated by it, but adapt it to the service of a present purpose.

Our village has been startled by a railway accident at the station, which caused serious damage. I happen to meet an old village gossip who sets out to tell me all about it. At the end of half an hour, with her continual 'he says' and 'I says', and her digressions into the history of all the tragedies of every kind that have happened within her memory, she leaves me utterly bewildered. Next I meet a writer of some skill, who happens to be staying in the neighbourhood, and in five minutes he makes the whole scene enact itself before me. Later on I read the inspector's report, which is less vivid, but explains exactly why the accident occurred. Each tale differs from the others. The

first is a failure, because its teller's mind ranges too wildly, so that she cannot effect her purpose; she does not know how to select the salient features of the catastrophe, and she cannot control her thoughts from all manner of digressions. The other two tales succeed because their details are throughout relevant to a single purpose which dominates the whole, being so selected and balanced as to produce just the calculated effect, with nothing wasted: I am enabled by one to imagine the scene, by the other to understand it.

Or take an instance of relevant thinking where one has to deal with a practical problem. The railways are disorganized by a strike; the town in which I live is growing insanitary; (I wish) to move my household into the country, and I have to (determine the best mode of travelling.) From thinking of travelling I might conceivably pass by pre-formed associations to (thinking of a Continental tour, a sea trip, ancient trade routes, eminent explorers, and any number of matters; but in point of fact these objects of thought do not occur to me at all.) (I find myself thinking of horse-cabs and motor-cars.) In this instance (I do not need consciously to select these objects for consideration; they seem to select themselves—that is to say, nothing (if I am in earnest with the problem) occurs to me that is not more or less relevant to its solution. I may for a moment, perhaps, think of walking and aeroplaning and then reject these as impossible modes of escape; but of totally irrelevant matters I simply do not think at all. Moreover, I think of cabs and

motor-cars only in a relevant way, though I may not happen ever to have thought of them before in just this setting: I have used them in the past only to take me to the station, but now I do not think of them in relation to catching a train; I think of motor-cars as helpless if petrol is not to be had, of horse-cabs as incapable of covering the distance under three or four days, or the like.

(It is unnecessary to show in detail that the same relevance to a central purpose is characteristic of our thoughts when we are considering purely theoretical problems, and of the images which occur to the artist when he is painting an imaginary scene or composing a piece of music.)

There are, of course, any number of degrees of relevance. Some people, like our village gossip, are at the mercy of their own ranging thoughts, and cannot appreciate the relative importance of the thoughts which occur to them; others succeed in selecting what is relevant; others, again, seem to think relevantly without effort. Evidently this last is the most rapid and economical procedure, but it is the least common. Many are capable of it when faced by urgent practical difficulties, and we are all acquainted with people who act with uncommon intelligence but cannot think coherently on any matter which is not to end in prompt action. Others, again, think relevantly without effort on special subjects in which they are much interested, but not on other topics.

§ 2. **Judgement and Reasoning.** If we examine our

own thoughts or those of others expressed in speech or writing, we find that they may be roughly divided into two classes, according as they do or do not form part of an argument or train of reasoning. One comes down in the morning, for example, and says, 'It's a regular English day,' turns to the newspaper and says, 'I wonder whether the lists are out,' opens it and says, 'X has failed after all' or 'The results are not as good as I expected.' These statements of affirmation or denial, which (whether expressed or not) are called judgements, do not depend upon previous argumentation. If they are challenged, one must argue in support of them, so as to explain, for instance, why one trusts the newspaper's reports, thus exhibiting the *grounds* of one's belief; and so it might not be right to say that they are groundless; but one may arrive at them without thinking of their grounds at all.

As we saw in Chapter XII the child's earliest judgements (for which, of course, *he* could not give any reasons yet) are of this simple, disconnected kind, being little more than exclamations elicited by the perception of interesting objects. But a great part of our adult thought also does not involve explicit reasoning. We make casual observations about things we perceive or about our own states and feelings, or we narrate what we have experienced or been told, or describe something that we have seen. Much indeed of what we say does not really deserve to be called our thought at all, being merely repetition by rote of statements made by others. We adopt the pronounce-

ments of our friends, or of our professional or political or ecclesiastical leaders, or of the gossips of the club and the tea-table, and call them our thoughts, when the most we have done is more or less vaguely to comprehend their meaning ; and in moments of excitement, when we become a mob, we may even kill or die for them without comprehending them at all. If we are really to make them our own judgements, we must understand their reasons.

The teacher is in a difficulty here. It is easy to teach one's pupils *that*, so that they repeat one's statements, but do not think them for themselves. But what is wanted is that they should understand *why*. Now if the teacher simply tells them why, then the *why* becomes merely another *that*, to be learned by rote. Yet to leave them always to discover *why* for themselves would be too lengthy, and sometimes hopeless. The way out of the difficulty is to assist them to put the question *Why?* to themselves in the right manner, so that they can see the attachments of this new fact to their previous knowledge. This is best done by question and answer ; but as long as fifty or sixty are gathered together in a class, it can hardly be done at all.

Reasoning is the way of finding an answer that is not obvious to questions that the mind sets to itself. We cannot indicate the moment in a child's life when reasoning begins, any more than that when judgement begins, for the development is continuous and not by jumps ; but we can indicate the practical attitude which is the prototype of reasoning, and out of which

explicit reasoning may grow. A child of eighteen months has been used to play with a ball on the lawn. When she goes out and finds no ball there, she usually seems disappointed, calls 'Ba'', perhaps frets or cries. One day she runs into the house, goes to the drawer in which the ball is kept, and tries to open it. Here is an adaptation of means to an end, not indeed the first in her life, but sufficiently complicated to arrest our attention. We need not suppose that it involves explicit reasoning—the child has no speech beyond a few substantives; thought is still merged in action, and the problem *How*? is solved at the level of action. Similarly, elder persons may put together jig-saw puzzles, manipulate instruments and alter them to suit varying purposes—a carpenter's plane, for instance—splice and whip a broken rod, and solve other practical problems without reflection on the ways of doing so. But we find in our own experience that often the question *How*? can be answered only by taking thought, or at any rate that taking thought saves us a great deal of trouble and many failures; and then we make plans, as e.g. for a journey. How are we to get to our destination? We must discover what line runs there, and when the trains start and arrive: we must get a time-table: we find that we must order a cab at such an hour: finally we summon one by the telephone. The problem may become more complicated if there are two lines running there: we have to estimate their rival advantages, perhaps we have to re-state our purpose to ourselves more clearly and decide on the

most convenient hour of arrival; but in general our procedure is to work back from the end in view through thought of the means necessary to its accomplishment till we arrive at a practical step which we take. The practical problems which the child first tries to solve by thought are, of course, far simpler than this: how to get at sweets in a high cupboard, how to hide successfully in a game of hide-and-seek, or the like; but they are the same in type. Some end is desired which cannot be attained immediately, and it is connected with what can be done at once by thought of various means. The means that first suggest themselves to the child may seem to us absurd, owing to the child's lack of experience; but its thought is not for that reason irrelevant, even when futile.

But *How*? is not the only question that the child asks itself (and others): still more frequent, because less easily answered by direct action, is the question *Why*? Like *How*? it originates in some surprise or bewilderment, but it is a more speculative question and involves a stirring of curiosity to know. It is not asked till late in the third year, as a rule, and comes after the questions *Where*? and *What*? and *Who*? The child's mother is not to be found at the usual place and time: Where is she?; then later, Why is she not here? Some implement or article of furniture is seen for the first time, or a novel object in a shop-window. What is it? (and this at first means, What is it for? What is its use?); then later, Why has it that shape or colour? A particularly common form of *Why*? is,

Who made so-and-so? First of all, Who made something be or behave in an unexpected way? (e.g. Who made the cup broken, or the cat frightened); then, in the sense of Who was the maker of the flowers or the cat or the house? The child's first questions are about particular persons or things that he sees or expects to see; and the answers he wants are in terms of use and agency. But when there is no one to answer, the child has to think for himself. Here, again, the problem is one of connexion: the observed fact has to be connected with what is already known. The connexions that occur to the child may seem very absurd to us, but for all that they may be the result of very relevant thinking. Dr. Sully tells of a 'little zoologist' who wanted to know whether Pussy hatched out kittens by sitting on eggs.[1] The suggestion is really very much to the point, if we consider the child's limited experience. It is based upon resemblance—the similar case of little chickens,—and logically no doubt it involves a generalization from chickens to all young animals; but we must not suppose that the child actually thought in this way: 'Little chickens are hatched from eggs, ∴ all little animals are, ∴ kittens are.' The universal judgement about 'all little animals' is logically implied, but it is not actually thought.

In this case the child, wiser than his elders often are, did not commit himself to a conclusion, but suspended judgement and inquired whether his guess were true. If now we turn to more advanced attempts at explana-

[1] *Studies of Childhood*, p. 85.

tion, we find that in type the process remains the same. Something of which the reason is not known has to be connected with what we do know, and we connect it by a guess (now perhaps called an 'hypothesis'). Suppose that as you lie in bed one morning, a horse comes ridden past. You recognize the source of the noise at once, and say 'I hear a horse coming down the road'. Strictly speaking, you do not hear the horse, but only the noise: yet you recognize the cause of the noise so quickly that you never ask yourself what the cause is. Psychologically we cannot say that there is inference in such rapid conceptual recognition, though you may be mistaken—(e.g. you may say that you 'hear a cuckoo', when really it is a boy imitating the cuckoo), and if your statement were challenged, you would have to give reasons for it. But a few minutes later you hear another noise, which is less familiar. You make guesses. Is it a motor-bicycle? or a threshing-machine? But it is not exactly like the sound of either, and, besides, it does not seem to come from the road. You have heard that aeroplanes make a queer noise of this kind. Perhaps it is an aeroplane. Then you test your hypothesis by looking out of the window or inquiring of some one else, and make sure that an aeroplane has gone by.

In this instance we may notice four points. You are not content to leave the problem just as it first occurred to you, but you try to render it more precise: first it was just a noise that puzzled you, then a very peculiar noise, then a very peculiar noise coming from an unusual

direction. Thus you reduce the number of likely guesses. But, secondly, you are able to make likely guesses only because of the extent of your previous knowledge. If you had always lived in a town, you would not know the noise of a threshing-machine; if you had never learned anything about aeroplanes, it would not occur to you that this horrible noise might be due to one. Yet, thirdly, a slower mind might know as much as you about aeroplanes, and yet not think of them in this connexion: so that knowledge must be combined with a certain quickness of thought in a good guesser. And, lastly, you suspend judgement until you can verify your guess.

Suppose you feel ill and call in your doctor. Yours may be a simple case: he knows that these symptoms can mean only one thing, and he tells you at once what is the matter with you. But the cause of the trouble may be more obscure. He then proceeds to define the problem, by feeling your pulse, looking at your tongue, watching you for symptoms that escape the first glance. If he has experience and knowledge and is also sufficiently quick of mind, several possible explanations may occur to him. But if he is duly cautious, he waits before pronouncing judgement. Suppose so-and-so is the cause, he would expect certain further symptoms, which he has not yet looked for: now he looks for them, perhaps has to wait a day or two to see whether they appear, and so tests his hypotheses by observation.

Sometimes he may be able to recognize symptoms as meaning a certain disease, but still not understand

the nature of the disease, nor how it originated. The attempt at explanation has to be carried further back, and by the same means—guessing, and testing the guesses by observation and, when possible, by experiment.

A great many popular beliefs are explanations which have been handed down from generation to generation without being adequately tested. Thus the belief that the sun goes round the earth accounted for a number of observed facts, but those which it makes unintelligible were not noticed. Men jumped to a conclusion. Similarly, it was until recently believed, naturally enough, that malaria is caught by inhaling the vapours that rise from marshy land. This belief accounted for the frequency of the disease in marshy country and its disappearance when the marshes are drained. But there were all the time facts, unnoticed or unconsidered, for which it did not account; and it has now been discovered that the minute organism which causes the disease is conveyed by a mosquito, so that if one is protected from mosquitoes' bites, one can stay in malarial country without catching malaria.

To be able to see where problems lie, and to be fertile of guesses in explanation of them, are powers which different minds possess in different degrees. Something may no doubt be done to train the former power so that curiosity becomes well directed. It is doubtful, however, whether education can do much to improve quickness at making guesses. Increase of knowledge may help out a natural weakness, perhaps, as far as

a particular topic is concerned, but it does not necessarily effect a general improvement. Thus we often wonder equally at the appropriateness of the guesses which a specialist makes in his own subject, and at his childishness when he passes outside of it. Perhaps the truth is that knowledge improves the quality of a man's guesses, but not his fertility of guesses. However that may be, it is at least important that education should not kill these powers, as it is apt to do when it becomes too formal or is degraded into the mere imparting of information.

When we start with the question *Why*? we can preface our answer with the word *Because*. But sometimes we start from a general principle, instead of searching for one, and apply it in a special instance. Examples are hardly necessary, so familiar are arguments of this type. 'Late letters need an extra stamp: you must put one on;' 'You had better avoid that mountain because it 's dangerous without a guide;' 'I'd rather not join in because one bad player spoils the set,' or any applications of proverbs or rules, may serve as illustrations. It has to be noticed, however, here as before that we may argue in a way which logically implies a general principle, without actually attending to the principle in thought. One child says to another, 'You must come in now.' 'Why?' 'Because you must:' he is puzzled when asked to state the reason. A little later he will say, 'Because mamma is calling you,' but still he does not think clearly of the general principle that she must be obeyed, though

perhaps he might say so in other words if he were still met by refusal. Similarly we argue, 'He talks like a Yorkshireman;' 'It is so foggy that the train will be late;' 'Since we have to take the work on, we had better make the best of it;' 'He must have been at home, because I got a reply by return,' and the like, without ever formulating the general principles on which our arguments depend.

In small children two kinds of conditions seem to be especially stimulating to reasoning of this type. One is expectation of some very gratifying or unpleasant occurrence—e.g. 'To-morrow is Sunday, so I shall have tart for dinner;' the other, any shock to the child's ideas of right or any opportunity of imposing a moral principle on others, e.g. 'You mustn't do that, because it's naughty,' or the example in the last paragraph. It is perhaps in connexion with commands or persuasions that he most often hears the word 'because' and first comes to understand its meaning: 'You must put up your toys now, because it's bed-time,' 'Don't make a noise, because you'll wake up the baby,' and other such reasonable admonitions are constantly impressed upon him. Similarly, he would never learn to ask 'Why?' and 'How?', unless he were often told how to do things and asked why he is doing this or that. Very slowly he learns to understand these questions, first putting them to others and then to himself.

§ 3. Imagination in Thinking. The words 'imagining' (or 'imagination') and 'thinking' are generally used

very loosely, and often lead to much confusion. Sometimes we are told that imagination and reasoning are destructive of one another, and that children become less imaginative the more they have to think; sometimes we hear that imagination is necessary to any advance in knowledge: sometimes the two words are used for the same thing. The difficulty may be illustrated by examples such as follow:

(1) You are reading a novel, and you close your eyes and try to picture the scene described. Here you are really attempting to combine visual images according to the author's prescription; yet if some one asked, 'What are you thinking about?' you would not consider the question inappropriate. 'Thinking' may be used loosely for any cognitive process that does not include perception.

(2) But if it were said: 'Don't merely picture the scene to yourself; think about its bearing on the plot of the story,' you would understand that you must not only combine images, but judge and reason conceptually. Thinking is here opposed to imaginative construction, and this is the strictest and best sense to give to the words. Thinking means judging, and reasoning, and asking, and supposing conceptually; imagining means the combination of images in new forms. We must distinguish imagining or imagination from what in Chapter XI we called 'imaging'—i.e. merely having images. If I simply picture to myself what I have seen as I saw it, or recall a tune as I heard it, I am simply 'imaging'; but if I picture my room as it

would be were I to alter the arrangement of the furniture, or if I compose a variation on a tune 'in my head' —if, in short, I not only have images, but use them purposively, and voluntarily bring them into new combinations—I am 'imagining'.[1]

(3) We often use the words 'think' and 'imagine' indifferently when we mean 'guess' or 'suppose'. But we may very well suppose without making use of new combinations of images. We often do so in attempting to answer the question *Why*? 'Why haven't the letters come?' 'Perhaps the mail-train has broken down.' We need not picture the breakdown in our minds. Such supposal is not a judgement that the train has broken down: we suspend judgement, or at the most we judge 'it may have broken down'. But it is a kind of conceiving, and not of imagining, and should therefore be ranked with thinking.

Often, however, it is of the greatest use, and sometimes it is necessary, to be able to imagine when we are trying to answer questions *How*? or *Why*? As a rule it is the power of combining visual images that is most important. Suppose, for instance, that I want to build a house. I can decide several questions without images—how many rooms I will have, and of what size; what I am prepared to spend; when I want it to be ready,—but it is desirable that I should be able

[1] Many writers use the term 'Reproductive Imagination' for our 'Imaging', and 'Productive' or 'Constructive Imagination' for what we call 'Imagination' simply.

to imagine the appearance of the house to be, and if I am actually the architect it is almost necessary.[1] Again, when I have to furnish the house, I must buy the furniture in a shop; but the result will be very uncertain if I cannot imagine how it will look in my rooms. If one sets out to make a box, it is desirable to be able not only to recall the look of a box one has seen, but also to imagine its parts as separate bits of wood, the alterations in them needed to suit some proposed change of shape, and the fitting of them together to form a new whole.

Imagining may be no less useful when one is trying to discover an explanation. The detective investigating a crime, or the inspector who has to report on a railway accident or an explosion, is at a disadvantage if he cannot reconstruct in imagination the scene as he guesses that it may have happened: when he is on the spot, he may make up for such a deficiency to some extent by careful observation and measurement, but he will be greatly hindered by it if he wants to reconsider the circumstances. The historian, reconstructing the course of a campaign, uses a map to enable him to imagine (though not necessarily in great detail) the movements of troops and the obstacles which they met. In men of science, who have accustomed themselves to strict thinking, it is said that images are often less vivid than in ordinary man. It can hardly be doubted,

[1] There are rare cases on record, however, of artists who lacked visual images; probably their tactual-motor imagery was vivid.

however, that many notions which have been prominent in the history of scientific explanation are the product of conjoint thought and imagination. Such are, for instance, atom, electric fluid, vibrations of the ether. But science cannot remain content with mental pictures, however useful they may be at the outset: it has to define its notions, and too lively an imagination may be injurious to understanding, if the mind concentrates itself on the contemplation of particular pictures instead of trying to understand general notions.

Images, then, are often a sign of imperfect scientific understanding, and so we find that the young and the ill-educated use them to eke out their immature powers of thought or their lack of concrete experience. It has already been pointed out that words which in us express thoughts may call up in the mind of a child who hears them some very inadequate or, as it seems to us, even irrelevant image; and a child's early attempts both at understanding others and at thinking for himself are bound to be much dominated by images because his narrow experience has given him comparatively little field for that activity of comparison which is the condition of conception. For precisely the same reason the ordinary adult, when he thinks of Heaven and Hell, imagines more than he thinks them; not that he does not think at all, but he is able to construct a satisfying picture, whereas he has too little knowledge to think them satisfactorily. Thus an image misleads him, perhaps, into absurdities which are naturally

called 'childish', because his way of thinking really is the child's.) But (though images may mislead, there is much that can never be grasped without their aid. (Suppose,) for example, that (you wish to teach a child about the Desert. If he has seen stretches of sand, you can with fair success prescribe to him how to construct an image of the Desert; but if he has never seen sand, or if you fail to give him the right assistance, he cannot really grasp your meaning; and the same difficulty arises in describing the Polar Regions to those who have never seen snow or been in a frosty climate. (Pictures, used for purpose of instruction, are simply means of overcoming this difficulty.)

§ 4. **Thinking in Imagination.** When we read a passage of descriptive poetry or history or travel or fiction, we may certainly understand it without imagining the scene described, but we cannot imagine the scene aright unless we understand. Yet the author's purpose is to arouse our imagination, and if, through hasty reading or our own incapacity, we fail to reconstruct the scene in image, his effort fails. For he is not discussing general principles, but is describing particular persons and places, and he wants us not merely to know about them, but, so far as is possible, to become acquainted with them; and as (we cannot make) their acquaintance by direct perception) he tells us how to construct them in image.) Take, for example, any of the descriptive passages in *The Ancient Mariner*, such as that where the Mariner tells how by the light of

the moon he beheld God's creatures of the great calm. You may read it through and be quite well aware that he saw water-snakes of various colours swimming about near the ship, and so on ; but the force of the passage is lost unless you linger over it and picture the scene in all its details.

Imagination thus applied has been called 'interpretative'. It involves an effort at construction on our part, but we are told what images to bring together and what kind of a total image they are to form. The author directs our imagination through our understanding of his meaning. It is, of course, possible that he may demand too much of us.) We may, like the child who has never seen snow, simply lack some of the images required. Or we may be unable to summon the right images at will, because of our perceptual experience at the moment : we should find it difficult to imagine the great calm when tossed in a tempest. Or we may be unable to combine the details in the way required : for instance, if we can imagine the several features of the heroine, but cannot put them together so as to form a likely face. Again, when we ourselves invent an imaginary scene, our procedure is as a rule partly thinking as well as imagining in the strict sense.

A distinction is commonly drawn by psychologists between imagination and fancy. In fancy we are comparatively passive : the images that occur to us are determined according to the principle of association, and our mind ranges haphazard from one to another, not following any settled plan. A child's attempts at

story-telling are in this sense usually fanciful rather than imaginative: they have scarcely any plot or connecting thought running through them. The child is distracted by each new fancy as easily as by each new percept; and thought comes in afterwards, in that he recognizes his images and expresses them in words. But when an older person invents a story, thought is involved from the outset. The story is to be 'about' this or that, and even if it is merely a description of an imaginary scene, it has to be thought in outline as well as vaguely imagined before the details are filled in. When the story is more complicated, great parts of it may involve very few imaginary pictures; thus even in *The Ancient Mariner* there are verses which make no demand on imagination proper, and you may find many novels which quite rarely do so. A fictitious story is all supposal or make-believe; but it has in its way to be consistent. In writing an ordinary novel we should naturally avoid making our characters be in two places at once or do other impossible things; and even in a fairy-story for children there are limits to what can be supposed. Similarly, in those parts which involve imagination proper, we are not carried away by ranging fancy, but must make the details of our pictures fit into an harmonious whole. Thus the higher flights of imagination are controlled by purpose no less than is practical or theoretical reasoning. Of course it would not be true to say that the story-teller always makes a complete outline of his plot at the beginning; he may find him-

self carried in unexpected directions. So may the scientific student in his investigations. None the less, both proceed on lines of purpose, and not capriciously.

References for Reading

In addition to the references given at the end of ch. xii, cp. Angell, *Psychology*, chaps. xi and xii; Binet, *Psychology of Reasoning*; Dewey, *How we think*; Mitchell, *Structure and Growth of the Mind* pp. 338–75.

CHAPTER XVI

SELF AND CHARACTER

§ 1. The teacher who concerns himself with psychology at all will find it especially interesting to study the growth in the child of knowledge of his own self and his gradual formation of self-regarding sentiments, not only because this particular phase of mental development has an obvious bearing on his practical problems, but also because it exemplifies in a very striking manner the dependence of the individual, as we generally call him, upon the society of which he is a member. Nothing, we are apt to think, is so evidently the private possession of each one of us as his own self and his idea of himself; and yet in fact, if we were isolated and impervious individuals, we could never learn to reflect upon ourselves or indeed to be persons at all.

As will be seen later on, the distinction that each of us draws between his own self and other persons and things is not by any means so clear or consistent as we often suppose. But it is not the business of psychology to inquire whether our knowledge is consistent and reasonable. It only notes that we do distinguish ourselves from others, and that we regard ourselves as, at any rate on this side of insanity, permanent

through our history; and it inquires on what conditions the rise and persistence of this distinction and this belief in our personal identity depend. The student is urged once again to supplement the following treatment of a complicated subject, not only by wider reading, but also by his own observation.

§ 2. **The Self and the Body.** We do not generally suppose that even the more intelligent animals, such as the dog, reflect on themselves and their character. We should probably admit, however, that in perception they seem to distinguish their own bodies from all other things, and in some rudimentary way to recognize them as their own. But it is quite conceivable that some conscious beings do not make even this elementary distinction, and that their bodies always remain as strange to them as its tail seems to be to the kitten who chases it, or his toes to the baby who, according to the familiar tale, gives them biscuits to eat. However that may be, the human baby soon passes beyond this stage and learns to distinguish its body in some way as its own.

It is clear enough that we adults ordinarily think of ourselves as embodied. We may at times distinguish between soul and body and regard the former as peculiarly ourselves, but as a rule—when, for example, we say that we are reading or are going to play cricket or have a headache—the body is a very prominent part of our notion of ourselves. Again, it is only the bodies of other selves that we can perceive at all. And finally our awareness of our personal identity depends

not only on our memory, but also in large measure on the sensory experiences which we are constantly receiving from different parts of the body. Every one knows how curiously alien his hand seems to him if it goes numb; he cannot feel it if it is touched, and he cannot control its movements; it becomes a dead weight hanging on to him. Now in some forms of disease the whole body goes numb or, as it is called, 'anaesthetic', and the patient no longer recognizes it as his, and no longer thinks of himself as the same person that he used to be; he says very likely that his own body is dead and that what you see is only a poor substitute for it, though sometimes, if you pinch or press him hard enough, you can recall one part or another of it to life for him.

Yet it is quite gradually that the baby comes to distinguish his own body from all others. Even when his sense of vision is pretty well developed, the parts of his body that he sees may be at first simply objects like other things that he sees, and a great part of his body, of course, he cannot see at all. Why does it become peculiarly interesting to him, so that when later he begins to reflect he thinks of it as specially his own? It *is* peculiar in several ways. In it he localizes with increasing definiteness pains, hungers, discomforts generally; on its surface he localizes sensory experiences of touch and temperature; every change in its position alters the complex of cutaneous and organic sensations which he constantly apprehends. If he sees other objects touch one another, he only sees them

touch ; but if they touch him, he sees and feels them too. He only sees the movements of other things, but his own movements he feels as well ; and, if he moves his hand over another part of his own body, he feels not only the movement, but also the contact both in his hand and in the part explored. Thus his body is intimately connected, as no other body is, with his sensations and feelings and activities, and when later he begins reflectively to distinguish himself from others, it is as a feeling and active body that he thinks of himself. But what leads him to regard his body as a single object? Every part of it contributes to his common bodily feeling, in every part he gets a variety of sensations when it is touched or hurt by himself or by other things. But more than this, other people treat his body as a single object—take him up and carry him, or turn him over in his cot, dress him, and so on. But how does he come to recognize other people as ' ones ' ? Obviously what we mean by ' one ' thing depends on our interest : if you go to buy a dinner-service, the whole set is one thing to you and to the shopman, but when you come to use it, it is many things; a necklace is one to wear, but many when you count the jewels in it. Now the infant sees that his mother or his nurse moves about all together, and in tending and helping him acts as a whole, and he has at first no occasion to break up this whole into a number of objects. But apprehending them as ' ones ' itself helps him to apprehend his own body as one, especially if he sees other babies, or sees himself (to him appearing to be

another baby) in a mirror. Yet it may be doubted whether as a rule the child really feels one to himself till that moment which must be the most triumphant moment in life, when he first begins to walk by himself and to carry his whole body about with him.

§ 3. **Persons and Things.** We have no reason to suppose that the child at any very early date draws anything like our distinction between persons and things. Probably all objects appear to him more like our 'persons' than our 'things', though at first his experiences must be so rudimentary that, even if we could live through that stage again in memory, we should not be able to give expression to it in words. We ourselves frequently attribute to inanimate objects something like personal experience. The road 'climbs' up from the valley, the mountain-peak 'leaps' up to the sky, the shop-window seems oppressed by the masonry above it as we should be by some heavy burden; the wind 'drives', the sea 'moans' and 'heaves' like a living thing, or the light 'dances' upon the waters. We may think our own language inaccurate, but we can hardly rid ourselves altogether of its implications, so natural is it to us to read our own active and feeling experiences into the objects that we perceive.

Now something of this reading himself into his objects must begin in the child at a very early date, for we can say with certainty of him a little later, when he begins to reflect and talk, that he takes many inanimate things to be alive and active; he will even scold his

toys, or if he bumps himself against the table, it is as much the table's doing as his.

The greatest difficulty must be to distinguish between things in motion and persons. Fixed and stationary things, the child soon finds, do not act on him, though he may be able to act on them; but moving objects are at first, as we have seen, the most attractive to him, and it is a late effort of thought to distinguish between conscious and mechanical movement. From the outset, however, persons (as he will afterwards discover them to be) are more interesting to him than any other objects, for they respond to his needs and tend and help him. Moreover, the behaviour of persons and of the lower animals too is as a rule particularly puzzling, and therefore stimulates the greatest curiosity; for things act pretty regularly, but the dog sometimes barks and sometimes doesn't, the nurse sometimes attends and sometimes doesn't, the parent sometimes smiles and sometimes frowns. So the child more easily forms habits of dealing with things, but to deal with persons requires a constant effort of watchful attention.

§ 4. Imitation and the Self. A still more important point is that persons are more imitable than things and than other animals. There is not much that the child can imitate in a train or a horse or a dog or a cock, for instance—their different noises, perhaps their movements in a rough way, and that is about all. But there is no end to his imitation of human behaviour. He starts, as we saw, by imitating simpler movements, then he learns to run as other children run, to throw

a ball, to dance to music, and so on. By imitating he learns not merely how to do things, but *what it feels like to do them*. And this is true to some extent, not only of movements, but of what we may roughly call attitudes. To take an example: A small girl of eighteen months, who was often reprimanded for not going quickly to sleep, had long been used to play at sending her doll to sleep, patting it and saying 'Bye-bye' to it; but one day, as it was seemingly quite quiet, she made it sit up, and thereupon began to scold it, as she was used to being scolded for sitting up in her cot. This is an instance of early 'dramatic imitation', no doubt, and we need not suppose that she took it for more than a game; but by copying in her play the attitude of her elders towards herself, she at once enlarged her own experience and began to understand theirs. This imitation of attitudes is, of course, common in older children, and it need not be make-believe: 'it is carried out also in the serious relations of daily life, as when the little girl of five or six years talks to, plays with, comforts, or reproves, a younger child in almost exact imitation of her mother.'[1]

The importance of imitation for our present purpose is, then, that it enables the child to live through the experiences of others or something more or less like them, and so to understand others and eventually to sympathize intelligently with them. Thus the processes of learning to understand oneself and of learning to understand others are really one. The child cannot

[1] McDougall, *Social Psychology*, p. 185.

come to understand the behaviour and emotions and motives of others except by interpreting them in the light of his own ; but he arrives at his own by copying others. So he learns himself through others, and others again through himself.

In learning to understand others the child learns also to appreciate the different attitudes of others towards himself, and this gradually affects his notion of himself. The little girl just mentioned, for example, by scolding her doll would come a step nearer to understanding her mother's reproof of her when she played in bed. Only a little step nearer at first, no doubt, for the rough mock-anger in which she threw the doll on the floor was still a long way removed from a parent's mingled reproof and solicitude. But it is by these little stages that development takes place, and in beginning to reprove her doll she began better to know what it means not only to reprove, but to be reproved. As her doll was then to her, so she would feel herself to be to her nurse or mother ; she would in turn be aware of herself as seeming naughty at times to others. In ways like this, when they come to think, children's conceptions of themselves reflect the attitudes of others towards them.[1] Nor is this much less true of most adolescents or even of adults. Few of us can, for example, withstand even open flattery if long continued : we may resist at first, but soon we fancy ourselves to be all that we hear we are.

In schools this is a matter of importance, especially

[1] Cp. McDougall, op. cit., p. 186.

among adolescents, who are generally very sensitive to the opinion of their seniors and equals. It is remarkable how often a boy on leaving school and entering a new circle of acquaintances will belie a firmly established school reputation, especially if it was bad. He told a few lies when he first went to school, or offended, perhaps, against the schoolboy's code of morals, and from that time he was counted a liar or a sneak and knew that everybody counted him one. So he came to think of himself as worthless, and so he continued to act worthlessly; but when he comes out into the world, and honesty and honour are expected of him, his conduct improves with his conception of his own character. The schoolmaster's problem is difficult, no doubt, in dealing with such a boy. Punishments and pious talks are often equally useless; but the master should at least remember this, that when once he shows a boy that he has lost all confidence in him, he can never do that boy anything but harm.

§ 5. Opposition and the Self. So far we have spoken only of imitation. Even when speaking of imitation we must of course allow for individual differences; children are not like bits of one piece of putty, all moulded alike if the same influences play upon them. Some copy more readily than others: some copy one kind of behaviour and some another. But after allowing for native differences, we may still say that the self comes to itself only through society and as a member of society, and that apart from other selves it is nothing.

At the same time, however, we have to note another tendency besides imitation, namely opposition, as it is often called. In the small baby's anger there is already implicit a kind of opposition to the world, long before he begins to distinguish himself reflectively from the world; but the tendency to opposition depends still more on the instinct of self-assertion and display and the opposed instinct of self-withdrawal. An infant of nine months old has learned, let us say, to clap her hands at the word of command; each time that she does so, she turns her head round to the onlookers and smiles when she receives the expressions of approval that she has learned to expect. A few months later and she begins to exhibit caprice and contrariness, sometimes playful, when she offers you a toy and then pulls it away as you are going to take it, or says 'Uncle' whenever she is told to say 'Auntie'; sometimes serious, when you try to turn her from the direction in which she wants to run or to keep her quiet when she wants to make merry. Obstinacy and showing off are the chief forms of this tendency to what we call self-assertion, and every time that they are exhibited this word 'self-assertion' grows better justified, for in asserting what at first is a very rudimentary self the child enriches its knowledge of itself and of the difference between itself and others.

This self-assertive tendency is given most scope when the child (or for that matter the adult) is among inferiors, younger, weaker, or less capable, and therefore fit to submit and show reverence. In the presence of

the child's elders and betters it is tempered by the opposed tendency which expresses itself in bashfulness or a feeling of inferiority. But this no less than the other involves opposition: in the one case the child contrasts himself with his inferiors, in the other just as much with his superiors.

In actual life, of course, the tendencies to imitation and to opposition are inextricably intertwined. The child can show off only because he has learned to do things, and at first he learns to do things, as we have seen, mainly by imitation. He feels inferior to his betters, again, because they can do things which he wants, but has not yet learned, to do: so that his uncomfortable feeling spurs him on to new efforts.

It is equally obvious that the tendency to opposition also is a thoroughly social phenomenon. The child can contrast himself (either as better or as worse) only with others whom he understands more or less well, and he can emphasize the contrast only as his understanding of them grows. Of course at a later stage it may take a definitely anti-social direction, in the selfish man who seeks his private advantage at the expense of others, or in the vain eccentric who tries to be unusual because, if he were simple, his worthlessness would be apparent, or in the conceited ass who calls his neighbours 'philistines' and 'cannot tolerate the commonplace'. But opposition need not be anti-social. If all men simply imitated one another's habits and accepted their opinions, no progress would be possible. Initiative and inventiveness, obstinacy

too and self-assertion of a kind, are all necessary to the most unselfish of men, if they are to do anything great—as necessary to the man who fights for justice and honesty as to the man who fights for his private gain.

Generally speaking, we may say that a combination of the two tendencies is what ought to be encouraged. Miss Calkins gives a simple and happily chosen illustration when she says: 'The well-dressed person neither defies fashion nor follows it to its last extreme; in general outline he conforms, but in well-chosen detail he is a law unto himself.'[1] This means that he conforms intelligently and does not merely copy; and so in other matters there is a proper mean between eccentricity and servility. In schools two different types of children present great difficulties; one type accepts whatever it is taught, but never digests or really assimilates it; the other, which is perhaps most commonly represented by boys with a taste for mechanical things, is full of schemes and 'inventions' but will not trouble to acquire the necessary knowledge. The former need to be convinced that they can think for themselves; in the latter it is rather the feeling of inferiority that needs to be encouraged.

§ 6. Self-confidence, too much and too little. Both self-satisfaction and lack of self-confidence form very serious obstacles, not only to progress in learning, but to growth of character in every direction. When the tendencies to self-assertion and its opposite are

[1] *Introduction to Psychology*, p. 344.

properly balanced, their combination is a constant incentive to progress: the child recognizes how far he falls short of what others tell him he ought to be, and struggles to become what they require. Gradually, therefore, there arises in him, as he comes to reflect, a conception of himself, not merely as he thinks he is, but as he knows he ought to be. At first he learns the difference between *is* and *ought* in a retrospective way; he is praised and rewarded for having done this, blamed and punished for having done that. Then he is guided by the image or thought of future praise or blame, reward or punishment; and a new stimulus is added in the desire to please, which grows with his power of sympathetically forecasting the effect of his behaviour upon the attitude of others towards him. A higher stage is reached when he becomes self-respecting in the full sense, and no longer wonders merely what others will think of him, but what he will think of himself, if he behaves in a certain way.

Now the child who lacks self-confidence fails to improve just because he thinks himself incapable of improving, and the difficulty of his case is that he generally needs more individual treatment than can be given him in the bustle of a school. He has to be shown step by step that he is able to do things which seemed to him impossible, until he learns to have more belief in himself. But this training requires great caution, or it may produce a kind of hidden priggish conceit in him, whilst leaving him outwardly as ineffective as ever. The causes of such lack of self-

confidence are many: sometimes, for example, constitutional conditions of health (which often pass away at adolescence), sometimes cruel treatment at home, often bullying in school.

But exaggerated self-satisfaction or conceit is still more deadly, for he who is already perfect in his own estimation has no incentive to improvement. As we saw in Chapter VIII, § 4, the conceited person's sentiment for himself may take the form of pride or that of vanity, the one based more on his own conception of his character and position, the other on what he takes to be others' conception of him. Pride is evidently the nearer to self-respect, and sometimes we use the word almost as a term of approbation; but in its strict sense pride excludes humility, whilst the self-respecting man feels humble and reverent before the proper objects and detests only mock humility. Both pride and vanity may be wounded, the latter by the contempt of others, the former by one's own failure; but pride is the less easily hurt, for it is apt to attribute failure wholly to the injustice of others. Both sentiments rest upon narrowness of outlook and interests, and sometimes when the attempt to wound them directly is ineffectual, they may be diminished (in boys and girls at any rate) by encouraging those who exhibit them to take an interest in matters where they are so obviously incompetent that they cannot deceive even themselves.

§ 7. Me and Mine. It was pointed out at the beginning of this chapter that the idea each one of us has of his

self is not really so clear as we often suppose it to be. No doubt a man will often say 'It 's as certain as that I am standing here' or 'as that I am not you', when he wishes to affirm his belief strongly; but if we ask him what he means by this 'I' of which he speaks so glibly, he will very likely not find it so easy to answer, and it will be worth the student's while to consider some of the difficulties that arise, though a full consideration of them will lead him outside the limits of psychology. He will soon discover this much, that the boundaries of what he considers his self are not fixed, but vary greatly from time to time.

We may begin by trying to think of ourselves in a negative way. I am at least, you may say, not anybody or anything else; my friends and relatives, my school and college, my profession, my country, are mine, but they are not me. I can know them, like or dislike them, help or hurt them, my character may be influenced by them, but they are not part of me. Now it is apparent that your body is not any other body, but you do not think of yourself merely as a body. If you hear your country insulted, you feel the smart as yours; if your friend meets with success, you are elated; and when his wife wrote to Oliver Cromwell, 'Truly my life is but half a life in your absence,' we may believe that she was stating, not metaphor, but fact. Suppose all these others annihilated, whom you distinguish from yourself; is not a great part of your self annihilated with them?

Or take a more trivial example—your clothes.

Again, you will say that you possess them, but they are not you; you can change them at will, buy some and discard others. Yet we generally think of ourselves as clothed selves, we often take a person's mode of dress as an index of his character, and we certainly find it difficult to remain assured and self-possessed if we are disreputably or inappropriately clad.

These examples show how variable the notion of self is; what at one time we call 'me', at another time we call only 'mine', and reversely, as our interest happens to be wider or narrower. 'In its widest possible sense', says Professor James, 'a man's self is the sum total of all that he *can* call his, not only his body and his psychic powers, but his clothes and his house, his wife and children, his ancestors and friends, his reputation and works, his land and horses, and yacht and bank-account. All these things give him the same emotions. If they wax and prosper, he feels triumphant; if they dwindle and die away, he feels cast down.'[1]

We find the same variability in the notion of our self if we try to say what it is positively. Usually, for instance, each of us includes his body, as we have seen, in his notion of self, and in this world at any rate the body is always with us; yet at times we revolt against the body as not ourselves—as 'mine' still, but not 'me',—when the spirit is willing though the flesh weak, when we say, for example, 'I am not frightened, though my body may be trembling.' Again, we include in our idea of ourselves above all, one might

[1] *Principles of Psychology*, i, pp. 291-2.

say, our own desires, thoughts, and emotions, the memories of our past history, our conception of our own character and capacities, our aspirations for the future. Yet even this we do not do quite consistently. As we grow older, we have an increasing difficulty in recognizing very distant actions of our childhood as really our own. The self of fevered delirium or even, as Dr. Stout has remarked,[1] of ordinary dreams does not seem to us afterwards to be our self. If sudden excitement or passion carries us away and we act in a manner inconsistent with our usual character as we conceive it, we are apt to repudiate our own behaviour and say 'I wasn't myself when I felt or thought or did that'.

§ 8. The Self that is and the Self that ought to be. But if reflection teaches us to regard our usual and comparatively settled dispositions and modes of conduct as more truly the self of us than stray impulses and passions, further reflection teaches us also that what we usually are falls short of what we might be, and that our true nature is not so much what we are as what we ought to become.

When we speak of a man's character, we generally refer to his settled dispositions to think and feel and act in certain ways—to his sentiments and 'habits of thought and will'. Thus used, the word 'character' involves the notion of something relatively settled and stable, and so we often say even of a vicious man that he has more character than one whose conduct is

[1] *Manual of Psychology*, Bk. IV, ch. xvii, § 3.

uncertain and fickle and swayed by caprice or by the influence of every one he meets. But we must not over-emphasize this aspect of character and suppose that it grows only in the young and becomes fixed for ever as soon as we reach years of discretion. It does become less plastic, no doubt, but it is still modified by circumstances, and it may still, if we like, grow by our own efforts, as all know but those who are consumed by vanity, and those who abandon themselves to self-pity.

A growth of character that is improvement is a growth in firmness and reliability, but it is also a growth in breadth—breadth of thought, of sympathy and love, of interest and activity. In one sense, of course, the child's outlook is automatically widened as he passes from home to school, and from school to the greater world. But more than this is required, for, if he was selfish at home, he may remain as selfish at school and after school: the enlargement of his circumstances gives him more scope for improvement, but that is all. The selfish person may think that he gets what he wants, but this is because the self that he gratifies is little and empty. We make a mistake in opposing self and others, if by the opposition we imply that the selfish and sensual really find their own good in doing others evil, or that the benevolent, public-spirited, and patriotic injure themselves in doing good to others. Selfish and unselfish alike seek welfare; but those seek it in opposition to the society of which in spite of themselves they cannot but remain members, whilst

these find it by identifying their own good with a good that goes beyond themselves.[1]

Training of character in the young is, therefore, a double problem. In the first place good habits and right interests must be formed, and those that are dangerous excluded. Something may be done to this end at first, perhaps, by direct rewards and punishments, if it is remembered that forcible repression of an undesirable tendency is useless unless a better is fostered in its place. Little is to be expected of *formal* Moral Instruction and lessons in Civics, Patriotism, and the like, which are too likely to breed prigs; character is fashioned in action, and not by isolated lessons. Far more effective are actual example—for the young are ingenuously ready to worship heroes and take any pains to copy them,—and the appeal to imaginative sympathy which is made by well-told stories of brave deeds and noble characters, and still more perhaps by honourable traditions of the family or the school. But the most influential of all means

[1] Cp. Mackenzie, *Manual of Ethics*, p. 349: 'Complete development of character can be attained only by devoting ourselves to some large end, in co-operation with others. Such an attachment comes to different men in different ways. Some find it in the pursuit of science, others in particular practical interests, others in the political life of the state, others in poetry or religion. It matters little what the form may be; but unless a man has, in some form, a broad human interest which lifts him out of himself, his life remains a fragment, and the virtues have no soil to live in.' The student should read also Bk. I, ch. i, §§ 5–6, Bk. II, ch. iv, § 2, and Bk. II, ch. v, § 12, of the same work, or Muirhead's *Elements of Ethics*, §§ 79 and 80.

is sympathetic personal encouragement of common interests and of the natural tendencies to different occupations which in numberless different ways take children out of themselves: for if children are to become self-respecting responsible persons, they must with tact and patience be incited to take upon themselves gradually widening responsibilities.

But, secondly, training must not be such that when later the child becomes his own master, his character ceases to grow towards good. We often read of savages who exercise all the virtues towards members of their own tribe, but, when they meet a stranger, regard it as in no way wrong to rob or torture and kill him. They do their duty to their neighbour, we might say, but they have an unreasonably narrow conception of the neighbour to whom they owe a duty. They are trained in the customs of their tribe, but there they stick, never using their intelligence so as to widen their notions of right and wrong. Something parallel to this is seen in many members of civilized societies, who act 'according to their lights' as they have been drilled to do when young, but their lights never grow brighter nor their conduct more intelligent. Greater breadth of view, breadth of sympathy, breadth of interest cannot come without reasonableness and thought and understanding of the world.

But reasonableness and understanding are not the same as mere acquisition of information, in the vulgar sense of the word. To be 'well-informed' is no doubt desirable: reasonable and intelligent patriotism, for

instance, is impossible to a person who knows nothing of his country beyond his own village. But information of this kind is useful only as an instrument; and when education consists simply in pumping information into the child's mind, it is rightly called, as we so often hear it called, useless or even injurious. But the true object of education is not merely to furnish the instrument, but to train the child in using it, and in improving it, and then using it again, and improving it again indefinitely often: to 'inform' the soul in the original and literal sense, or, as Plato said, to 'convert' it or turn it to the light; to produce a person, well-informed no doubt, but also intelligent and thoughtful. This is not to be done merely by lucid teaching, for teaching may be so lucid that the child sucks it in without any effort of its own, nor by obscure teaching that only baffles and bores the child. It requires teaching that at once stimulates the child to think for himself, and fosters in him a right sense of the value of thought and sympathy and generally of the life of the spirit.

References for Reading

On the subjects of this chapter in general, cp. Baldwin, *Mental Development*, pp. 112 f., 140 f., 316 f., and *Social and Ethical Interpretations*, throughout; Calkins, *Introduction*, chaps. xii and xxiii; James, *Principles*, ch. x; Royce, *Outlines*, ch. xii; Stout, *Manual*, Bk. IV, chaps. vii and x, § 2, and *Groundwork*, ch. xiv.

On the early development of consciousness of self, cp. also Compayré, *Development of the Child in later infancy*, ch. viii; McDougall, *Introduction to Social Psychology*, pp. 181 f.; Preyer, *Mind of the Child*, Part II, ch. xix; and other works mentioned at the end of ch. iii of this book.

Much may be learned from the study of disorders of consciousness of self in the abnormal and insane. Some account of such disorders is to be found in the chapter by James referred to above, and in Calkins, op. cit., ch. xxvii. Cp. also Binet, *Alterations of Personality*; Ribot, *Disorders of Personality*; Störring, *Mental Pathology in its relation to Normal Psychology*, lecture xvii ; the article 'Personality (Disorders of)' in Baldwin's *Dictionary*; and any standard work on mental pathology.

On § 8 cp. the treatises on ethics mentioned in the footnote; and on education and information, cp. Holmes, *What Is and What Might Be in Education*.

APPENDIX I

If the student has in the course of perusing this introductory book consulted the works to which he has been referred at the end of each chapter, he will probably have been led to enter on a course of further reading for himself. Should that not be so, he is recommended to study next some more comprehensive text-books, preferably Angell's *Psychology* and Stout's *Manual of Psychology*. He will then probably be able to find his way about the literature of the subject for himself, but if he wishes to make a serious study of it, he should on no account omit to read James's *Principles of Psychology*, Mitchell's *Structure and Growth of the Mind*, Stout's *Analytic Psychology*, and Ward's article 'Psychology' in the *Encyclopaedia Britannica*.

Of works on educational psychology he will probably find the following among the most useful :—

Bagley : *The Educative Process.*
Welton : *Psychology of Education.*
Adams : *Herbartian Psychology.*

APPENDIX II

EXERCISES

[N.B.—These questions are not as a rule *directly* concerned with the subject-matter of the various chapters to which they are appended. They are in the nature of 'riders' and deal in the main with the ordinary classroom experience of the schoolmaster.]

Chapter I

1. Read Wordsworth's Ode, 'Intimations of Immortality from Recollections of Early Childhood.' Distinguish the parts which are (1) really recollections, (2) reflections on his own experience, (3) and apparently descriptive of other children.

2. Describe the behaviour of a group of small town children (say six years old) who are enjoying a picnic in the country. Distinguish between the girls and the boys if you can.

3. 'Now, growing double o'er the Stagirite
At least I soil no page with bread and milk,
Nor crumple, dog's ear, and deface—boys' way.'

The third line contains a general statement about boys. How far is it true? On what evidence is it based? There is perhaps a note of superiority in the phrase, *boys' way*: is this the standpoint of the psychologist? What attitude would he adopt towards the fact in a particular case?

Chapter II

4. Describe your state of mind on entering the room in which a serious examination is about to begin. In your description bring out the three aspects in which it may be viewed.

5. Arrange the following animals in ascending and descending order of their intelligence. Give reasons for your order: oyster, hermit crab, spider, ant, cat, rat, dog, sheep, rook, cuckoo.

6. Granted that the problems concerned are suitable, which is the more likely to keep boys active and occupied, a series of problems in simultaneous equations or a series of the type: $x+y=14$; $xy=6$? Why?

7. Consider the school time-table in the light of § 3.

8. From the point of view of Class Discipline, what general 'dispositions' do you strive to fix in your pupils' minds?

9. Consider the methods of drill in multiplication tables at school. It is often said that the children are not 'bending their minds' to the work. What exactly does this mean? How will it affect the result sought by the teacher? Can you think of other examples of similar difficulties? What general principle must be kept in mind by the teacher if he is to overcome these difficulties?

10. Enumerate as many instances of 'conative continuity' as you can think of, typical of schoolboy (or schoolgirl) life. Are these all found in one boy or usually in different boys? Consider one example in detail and describe its fluctuations and the variations of feeling and cognition which accompany it.

11. Compare the feelings of a small child of six with those of a boy of fourteen when called on suddenly at school to recite a poem before a visitor.

Chapter III

12. A child of ten months saw the moon for the first time. He stretched out his arm and tried to grasp it. What light does this throw on his mental development at the time?

13. Consider the mental processes involved in the action of a small child who repeatedly drops a toy over the edge of the table and then calls for it to be picked up again.

14. Watch a little child 'learning to walk'. Describe his progress as carefully as you can.

15. Compare the condition of a boy (or girl) learning to play tennis with that of a little one learning to hold his spoon to feed himself.

16. Why are little children often 'spoilt' in infancy? How does it come about?

Chapter IV

Language

17. ' Vocabulary may exceed but rarely lags behind our needs.' Consider this statement.

18. Discuss from the standpoint of psychology the value of school exercises known as sentence-building.

19. What is the psychological justification for the statement that it is the paragraph, not the sentence, which is the unit of composition ?

20. A small child of fifteen months calls a pair of scissors ' Gogngogns ', another of two and a half years calls water ' yorper '. Make a collection of similar curious words used by children and discuss their origin.

Chapter V

Purpose

21. Watch a class in an infants' school learning some simple new dance movement. Describe the types of awkwardness you see. What proportion fall into the rhythm of movement almost at once ? Find out how long the awkward children take to gain the necessary control. How does their teacher help them ?

22. It was at one time a common ambition among schoolmasters to make all their pupils write alike. Consider this from the standpoint (1) of its possibility, (2) of its desirability.

23. It is credibly asserted that the practice of requiring young children to write with double guiding lines puts a fetter on the child's progress. What is the goal to be aimed at in this case ? Consider how double lines affect the children and whether they are likely to help or hinder them in acquiring the necessary habit.

24. A puppy and a child are brought up in the same household. Are they therefore in the same environment ? Give reasons for your answer.

25. ' Accuracy in arithmetic and spelling is a matter of habit.' Is this so ? If you agree, what does this suggest as to methods of teaching them ?

26. What habits would you expect a good school and home training to fix in children? How is it that children who are perfectly docile in school are sometimes very troublesome at home?

Chapter VI

Purpose (continued)

27. How do you account for such mistakes as the following in the work of adults:

$2+3+4+9=17$;
there (for *their*);
has (for *as*)?

28. Children vary greatly in purposefulness. Describe carefully from your experience any instances of extremes you have come across. (The children should be of approximately equal age.)

29. A small child of three is fond of 'writing'. He produces

Discuss this activity from the standpoint of imitation. Would you attempt now to teach him to write? Why (or Why not)?

30. Compare the play of young children of three to four with that of children of twelve as types of impulsive behaviour. (The answer should be based on actual observation in the playground if it is to be worth anything.)

31. Study the time-table of a junior school. In which of the lesson periods do you think the work is likely to be most purposeful from the standpoint of the pupils? Why?

32. What purposes may enter into upper school work which are impossible in the lower school? Describe any effort of which you know directed to making lower school work more purposeful. (Cp. Dewey: *The School and the Child.*)

33. Watch a class (1) absorbed in listening to a well-told story, (2) busy working out arithmetical problems. Describe and (as far as possible) account for the differences in external attitudes as expressing mental activity.

34. Children are much more subject to casual desire than older people. Why is this? How does a good school training help in the organization of desires? Why does school training sometimes fail in this respect?

35. Consider your own favourite subject of study. How did your liking for it originate? Was it due to chance external circumstances? Was the subject interesting from the beginning? Describe the development of the interest.

36. What physical conditions (bodily and other) are particularly unfavourable to continued attention?

37. 'The right use of liberty depends on the possession of right desires.' What kinds of desires would you wish to promote in school children, and how would you set about it?

Chapter VII

38. Which lessons in school seem to you to bore the children most? How do you account for it? Is boredom a necessary feature of school life?

39. 'It does not matter much what we teach in school so long as it is difficult enough.' Consider this from the standpoint of the relation of pleasure to work.

40. Compare the feelings that go with work done under compulsion with those of work done voluntarily. Is work done under compulsion necessarily badly done, and work done voluntarily necessarily well done? Give reasons for your answer.

Chapter VIII

41. Consider the question of corporal punishment of school children from the standpoint of the emotions it is likely to engender (*a*) in boys, (*b*) in girls.

42. Compare the emotional activities stirred by good history-teaching with those stirred by the good teacher of mathematics.

43. 'You can no more teach literature than you can teach a boy to fall in love.' Discuss this.

44. 'Sympathy with children is a far more important asset in a teacher than a knowledge of psychology.' Is this true? If so, why? Are the two things mutually exclusive? Is it possible to *understand* the minds of children without being sympathetic with them?

45. How would you endeavour to develop the sympathies of children and to make them at the same time find effective expression?

46. Compare home life and school life as sources of abiding sentiments. Account for the differences you note.

47. What do you understand by the scientific habit of mind? How may school cultivate it?

Chapter IX

48. Consider the following examples of school activities and show what particular type of 'cognitive object' is chiefly before the mind of the pupils at the time. What other cognitive objects less adequately apprehended does your analysis reveal?

(*a*) Drill: (i) learning a new exercise;
(ii) repeating an old and well-known one under the order 'Continue the practice'.
(*b*) Copying a map (physical features).
(*c*) Drawing a section across a given contour map.
(*d*) Keeping goal in a football match.
(*e*) Writing (i) a piece of French dictation;
(ii) a piece of English dictation.
(*f*) A 'captain' selecting a cricket team.

Chapter X

49. You offer a small child two pieces of chocolate, or three smaller pieces which together are not equal in amount to the two larger ones. He usually chooses the latter. Why is this?

50. It is sometimes said that young children are very observant. Is this so? In what directions is it likely to be true?

51. A child described the Equator as 'a menagerie lion running round the earth'. How do you account for his blunder?

52. What mistakes in reading are common to a class of children who have just got over the mechanical difficulties (say Standard II)? How do you account for them? What leads to their disappearance?

53. 'Children normally perceive wholes before they notice the parts of which those wholes are composed.' Consider this dictum in relation to children's attitudes towards

(*a*) strawberries,
(*b*) lead pencils,
(*c*) pictures,
(*d*) flowers.

How do they come to attend to parts?

Chapter XI

54. Consider the following poems from the standpoint of the imagery involved, and say how old the children would be whom you would expect to enjoy them. Give reasons.

(1) 'The Forsaken Merman.' M. Arnold.
(2) 'Daffodils':
'I wander'd lonely as a cloud.'
Wordsworth.
(3) 'Recessional.' Kipling.
(4) 'Lord Ullin's Daughter.' Campbell.
(5) 'Home Thoughts from Abroad.' R. Browning.
(6) 'The Skylark.' Shelley.

55. What is the psychological justification for using a picture to teach boys common French words and phrases instead of teaching them through the English *words*? Does the age of the pupils make a difference? If so, why?

56. If you set a class to learn lines of poetry by heart they will commonly set about their task in such a way

that a loud buzzing noise fills the classroom. Would you stop this ? If not, why not ?

57. Asked what pictures the names Egypt, Canada, Switzerland, Japan, brought to his mind, a boy wrote :

> ' Egypt reminds me of a camel's head when looked at from the west, only the nose is missing.' ' Canada reminds me of a hen " laying " down if Hudson's Bay was filled in.' ' Switzerland reminds me of a big thick plaited rope, the different strings being mountain ranges.' ' Japan brings a picture like a crescent to my mind.'

How do you account for this imagery ? Is it geographic imagery ? How would you supply the necessary images for giving English boys some correct notions of a country like China or Japan ?

58. ' Historical teaching (in the case of schoolboys) depends primarily upon supplying images of times and circumstances totally different from our own.' How are children otherwise to understand Chivalry, Monastic Life, the Feudal System ? How does dramatization help ?

Chapter XII

59. A child of five said to his mother, who said she had only a shilling left in her purse, ' Let me take it to the shop for some sweets, then they will give me a lot of money back.' Upon what concept was his proposal based ? Describe how experience would be likely to correct it.

60. A lesson on China to boys of twelve would differ entirely from a lesson on the same subject to boys of sixteen. What concepts could you assume or work up to in the latter case which would be beyond the ordinary boy of twelve ?

61. Schools are commonly charged with verbalism and bookiness. Make this charge in psychological terms and say why school is always liable to fall into this vice.

62. How do the arithmetical processes involved in working problems in Stocks and Shares differ from those involved in the first four rules ? How do the schoolboy's concepts of Stocks and Shares compare with those of the actual investor or speculator ?

63. Take any of the usual anthologies for schools, and select those poems which by their conceptual implications seem to you most likely to appeal to the children they are meant for. State explicitly the psychological grounds on which you reject some of the poems.

Chapter XIII

64. How does the 'wild ranging of the mind' affect the teacher's problem (*a*) in the kindergarten, (*b*) in the middle school, (*c*) in an upper form?

65. Take such a book as *Cranford* and cite therefrom half a dozen examples of 'wild ranging'. Trace and classify the various associative links.

66. Give an account of some dream of your own which illustrates aptly the 'tricks' which mere association will play with mental processes.

67. Instead of plunging into the middle of their subject, teachers commonly spend the first minute or two in leading up to it. Why? It is usually less necessary with older pupils than with younger. Why?

Chapter XIV

68. You wish a pupil to master
(1) the Multiplication Table,
(2) the proof of a Geometrical Theorem,
(3) Shakespeare's *Julius Caesar*.
Compare the memory processes involved in each case. What improper reliance upon memory might occur? Why do you call it 'improper'?

69. Consider the case of bad spelling from the point of view of memory. Can a bad speller have a good memory? What suggestions can you offer for the improvement of the spelling memory?

70. Distinguish carefully between the 'casual' and the 'rational' memory. In what sense is it justifiable to speak of different 'memories'?

71. 'We are all apt to remember what we may forget.' How do you account for this? Can you give instances of

this sort of thing either in relation to your present studies or in relation to your past school life ?

72. Is it ever justifiable to compel children to learn anything by heart ? If so, when and why ?

73. Do *you* remember what you hear (in lecture, for example) or what you read most easily ? How do you account for it ?

74. 'Taking notes and making abstracts are excellent aids to memory.' Is this always so ? Upon what does the truth of the statement depend ?

75. What sort of detail would you introduce into a lesson on the reign of Henry II to boys of ten and to youths of sixteen ? Why the difference ?

76. Compare the geography of China and that of France as given in any school text-book you know. How much of this would you expect to be remembered after the boys left school ? Should they be required to learn now what they may and will forget after ?

Chapter XV

77. Make a collection of the irrelevant remarks, questions, &c., which you observe in the various classes of the kindergarten and lower school. Do they increase or decrease as you go up the school ? Why ?

78. Childhood has been called 'the golden age of the Imagination'. Critically consider this view of childhood.

79. Boys of twelve to fourteen are asked in an examination 'what William the Conqueror would be likely to have said to King George V had he seen the Durbar'. Would you call this a thought-provoking question ? Why ? What of the Imaginative effort ?

80. Consider the ordinary subjects of a school curriculum. Arrange them in the order in which you think they would come from the point of view of the problem method of teaching—putting the one first which lends itself to that treatment most readily.

81. Is it desirable always to put our class in the position of the discoverer ? Why ?

82. Is the lad who is quick to solve geometrical riders

always equally good at Latin construing—supposing he has spent the same amount of time at each subject? If there is a difference how do you account for it?

83. Suggest three exercises in three different subjects which call for imaginative thinking—within the reach of ordinary schoolboys.

84. 'In a great deal of school work, it is the teacher, not the pupil, who is doing the thinking.' Is this true? Find illustrative examples.

Chapter XVI

85. Consider the part which school activities—outside classroom work—play in the development of the self.

86. How would you treat the following typical difficulties of school life: obstinacy, untruthfulness, impertinence, selfishness, laziness? (Treatment will of course follow the analysis of the situation.)

87. Some schoolboy ideals are not entirely worthy. Give examples, and reasons.

88. Estimate the value of Habits in relation to Character. Say exactly what you include under Habits.

89. 'Mother, will my self stop aching when I've had my dinner?'

'I am ashamed of my self.'

'I will do it my self.'

'His self-will was an unpleasant feature in his character.' Discuss the various meanings of the word 'self' in these sentences.

90. How do school children arrive at such an ideal as that of 'Fairness'?

91. Critically consider Fröbel's method of placing ideals before young children (in the *Mutter und Kose-Lieder*).

General

92. What do you understand by 'Hand and Eye' Training? Discuss the psychological conditions of successful work in that direction.

93. Consider the school time-table from the standpoint of developing purposefulness in children.

94. What are the psychical differences in the position of a child learning to speak his mother tongue and (at a later period) learning to speak a foreign language ?

95. Thring advises teachers ' to slay one goose at a time ' (e.g. in teaching the art of composition). What psychological justification for this would you offer ?

96. Read the same story to children of eight and to children of ten. Let them reproduce it in writing. Compare the best and the worst in each group from the standpoint of (1) coherent and consecutive movement of thought, (2) the points in the story which they have omitted. Do the same thing with the two papers you have chosen as best, and with the two you have chosen as worst.

97. Consider from the psychological standpoint the effect of allowing children to help each other freely in their lessons.

98. It is said that some of our best pupils are not good at examinations. Set forth the mental qualities that make a good examinee. Are they worth cultivating ? Why ?

99. A student wrote at the head of a ' Notes of Lesson ' on Browning's ' The Boy and the Angel ' :

Aim : To cultivate the Imagination and to enlarge the pupils' vocabulary.

Critically consider this.

100. ' The function of the school is to enlarge the experience of the pupils.' What is ' experience ' ? How does it affect behaviour ?

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